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THE RACE
WAVE**

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NI Paper and the Environment

LAST December, when we reported back on our latest survey
of subscriber opinions, we promised to keep you in touch
with our researches into recycled paper.

This survey showed that a switch to recycled paper was by far the
most popular possible change for the magazine — even if the repro-
duction of photographs suffered as a result. And as a magazine that
campaigns for a better world it is a change we would like to be able
to make. But we have not found it easy.

When we first investigated at the time of the Trees issue in June
1988 it was clear that we would not be able to print our magazine on
recycled paper because there was none available that fitted our printing
machines. Readers then wrote in pointing to magazines such as
Resurgence which are printed on recycled paper and still have a reason-
able quality of reproduction.

The problem here is that magazines with smaller circulations are
printed by the *litho* process by which each sheet is individually fed into
the machine. The NI is printed
on a *web*, which involves whole
reels of paper being passed
through the printing press.
Litho is a lot more expensive
and that is one of the main rea-
sons why small magazines find
it hard to survive. We cannot
afford to go back to the litho
method now.

In the last two years the
situation has changed. As the
demand for recycled paper
increases paper manufacturers
are beginning to try and
increase supplies. The recycled
paper industry is still at a very
early stage in Britain and,
despite the laudable efforts
of Friends of the Earth volunteers up and down the country, we
collect less waste paper for recycling than almost any other industrial
nation.

Whilst the quality and availability of recycled paper is improving
all the time it is by no means the only option. An article by a recy-
cled-paper supplier in the Spring issue of *New Consumer* considers it
as at best misleading to connect the use of recycled paper with the
saving of forest resources. The important point is that paper should
come from a sustainable source and be produced in an environmen-
tally-friendly way.

While we have extended our search for a high-quality recycled
paper to continental Europe we have still not managed to find one
that provides sufficient quality at a cost which we can afford.

However, we have located a more 'environment-friendly' paper
which is within our means. This is Scangloss which is grown in
Sweden where forestation is readily accepted and is not regarded as a
blot on the landscape.

These forests have to be replanted if the companies that control
them are to stay in business. Scangloss has the environmental
advantage of using much less chlorine bleach than normal paper (17
per cent, with the remainder hydrogen peroxide).

The NI magazine has been printed on this new paper since
March with a negligible difference in quality.

We have also been seeking an alternative to the plastic envelopes
in which we mail the magazine. The advice we have received from
environmental groups is that bio-degradable plastic is not an option.
Some plastics will only degrade in the sunlight; others which it is
claimed will degrade deep in landfill sites actually only reduce the
plastic to tiny pieces.

We have therefore decided to go instead for recycled polythene
when our current stocks run out. As with much recycled paper this is
surplus material which would have been dumped by the factories
that make it; it has been bought by another company, melted down
and reconstituted. It is no easier to dispose of than any other plastic
but using it at least means that NI will no longer be adding to the
total waste-plastic problem. The change will increase the cost of our
magazine envelope by 45 per cent but we think this is an investment
worth making.

We hope this reassures you. We regard these changes as no more
than steps in the right direction and we will certainly continue to
investigate any new recycled papers that emerge.





I CAN'T write 'I'. Come on Maggie, you're surely not that self-effacing! Now look here Chris, do you realise that in the US no self-respecting journalist ever writes 'I'? What do they write then? 'A visitor', third person, if they absolutely have to. Shall I write: 'A guest editor'? No, certainly

not, this is where we reveal ourselves, show NI behind the scenes. Why can't **you** [Chris, production] be revealed, and Alan [design], and Kate [typesetting]. We could all be revealed together. No, this is the letter from the **Editor**. Anything except your sex life. I see. OK.

Hallo Punters. (That's what you're sometimes called around here. I'm not an American but I just came back from living there for a number of years, and no-one's heard of punters there. To me a punter is a person with a pole in the back of a boat on the Cherwell River.) No good! Culture-centric! Come on Maggie, please get on with it, you're wasting space.

While I was putting together this magazine, I became so fascinated by the way our entire language is infused with liquid metaphors and watery words that I saved them up on my Wordstar diskette (I hate Wordstar but that's what the **NI** uses), and I was just going to pour enough of them out onto the page to fill up the Editor's Letter, and that would have been it. No no, quite unsuitable. *Jug of cold water.*

What shall I write about then? Tell them about what it used to be like being an editor here. After all you were the first woman editor, say what it's like to come back and how it's all changed. *Heart sinks.* Are you sure the punters want to know? Anyway it hasn't changed, not much. Still a bunch of bruisable egos, intellectual rapiers, overwork, frantic deadlines, furrowed brows, radical fervour, Nicaraguan coffee, Tanzanian tea. *Time flows by.* Well, not quite true, Somoza was still in power then so the coffee was Tanzanian and the tea, well never mind about the tea. *Soaking up the ambiance.*

That was 1977. The first **NI** issue about women. My co-editor, unreconstructed from a gender point of view, wrote an editorial, left it on my desk, and went off on holiday. It never occurred to

me to protest. *Wet blanket.* I simply omitted to use it. *Water under the bridge.* That wouldn't happen today. Not now we are person-conscientized. On the whole it's a great improvement, but I did protest about 'handypeople'. *Against the stream.* Chris, I'm not having handypeople in this issue. Maggie, this Editor's letter isn't at all what it should be, and mankind is not mankind, it's co-operative policy. Ah. *There is a tide in the affairs of person...*

I'd forgotten what it takes to be an **NI** editor. It's quite tough you know. *Breasting the waves.* You have to learn your stuff (I knew water and sanitation from writing about it for UNICEF, but this was different). And then you have to get the best people to write it and draw it the best way at rates, well, there's another thing that doesn't change much. *Drop in the bucket.* I hope you enjoy it. I did. Swimmily.

Maggie Black
for the New Internationalist Co-operative

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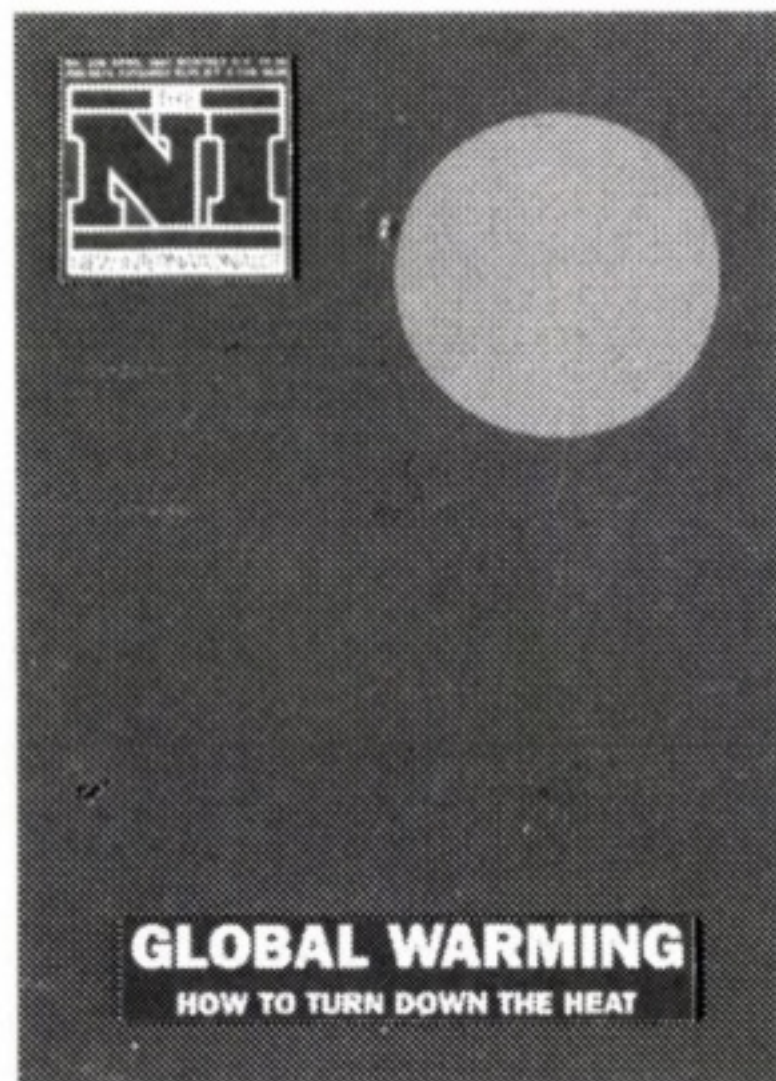
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Greenhouse warrior

Your issue on *Global warming* (NI 206) was subtitled *How to turn down the heat*. But you offered only vague generalities like 'Save the trees' or bland nostrums like 'Love your neighbour'. I



found your approach singularly unhelpful. Of course we would all like to change the world. But I need practical advice about how my family and I can help fight the greenhouse effect in our daily lives. Surely living a 'green' lifestyle is the key. For goodness sake tell us as individuals how we can help, otherwise what's the point?

Naomi Randolph
Calgary, Canada

Bible bashing

I was appalled by the views of two readers whose letters on the subject of homosexuality appeared in the *letters* section of NI 204. I had read your issue on the subject (NI 201) and found it lively, interesting and very informative. No doubt Bill Peters did too, but then he shot himself in the foot by quoting the Bible. 'Effeminate by perversion!' Indeed! St Paul sounds like a nice bloke, Bill. As for Genesis, does anybody really believe that stuff anymore?

Peter Bird
London, UK

Promiscuous disease

In response to Jenny Mason's letter (*Letters* NI 205) God does not inflict illness on humankind, nor war, nor

NI welcomes your letters. But please keep them short. They may be edited for purposes of space or clarity. Include a home telephone number if possible and send your letters to the nearest editorial office. The address is inside the front cover.

famine. Humankind spreads diseases, fights wars and lets others of the species starve. AIDS first ran riot among the 'bath-house' community in San Francisco not because of God's wrath at homosexual men, but because of the frequent changing of partners. Like other sexually-transmitted diseases, AIDS is not a homosexual or a heterosexual illness, but a disease of promiscuity.

Andrew Wood
Kings Lynn, UK

Healing words

Jesus healed leprosy which was the scourge of his society and AIDS is probably the modern-day equivalent. Christians need to be foremost in caring for the needy – and that includes people with AIDS. Christianity is a call to give life to other people; to heal the brokenness in ourselves, other people and society.

Sean Finnigan
Bath, UK

Funding excuses

I enjoyed your article *Dateline 2000* (NI 203), but as a scientist myself, I must protest at the comments under the heading 'AIDS unconquered'. You imply that pharmaceutical companies have avoided finding a cure for AIDS for reasons of financial gain. While it is true, and sad, that profit often

prevents new drugs from being freely available in the Third World, I am not aware of any example of a cure being avoided in the treatment of any disease. Also, it is scientists not economists who are doing drug research and they are constantly screening for a drug that will have any effect at all against AIDS. While difficult financial restrictions are imposed, it is not to prevent a cure being found. And if AIDS control is the best that can be done, we should not be disparaging.

Jane Nally
University of Glasgow, UK

Gentle Goddess

I'm amazed at Marion Laring's letter (*Letters* NI 203) claiming that Goddess-worship is mainly suitable for extreme feminists, and associating Goddess-worship with human sacrifice, prostitution, castration and sexual orgies. Most religions of our remote ancestors used those things, whether they worshipped gods or goddesses. But it's absurd to suggest that Goddess-worshippers practise them now. On the other hand most God-worshipping religions sanction – and indeed encourage – the mass human sacrifice of war. And some demand the castration of women – euphemistically called 'female circumcision'. Moreover by continuing to preach that women are sub-

servient to men, they often encourage prostitution and rape. Goddess-worshippers are gentle people and their religion has more care for the earth than God-dominated religions, which tend to regard the world as a place to be conquered and subdued.

Sheila Miller
London, UK

Weekly worry

As one who is using your interesting 1990 diary, I am constantly affronted by the setting out of weeks commencing with Monday instead of Sunday, which has long since been the first day of the week; in fact it was so called in an incident nearly 2,000 years ago.

J Williams
Fitzroy, Australia

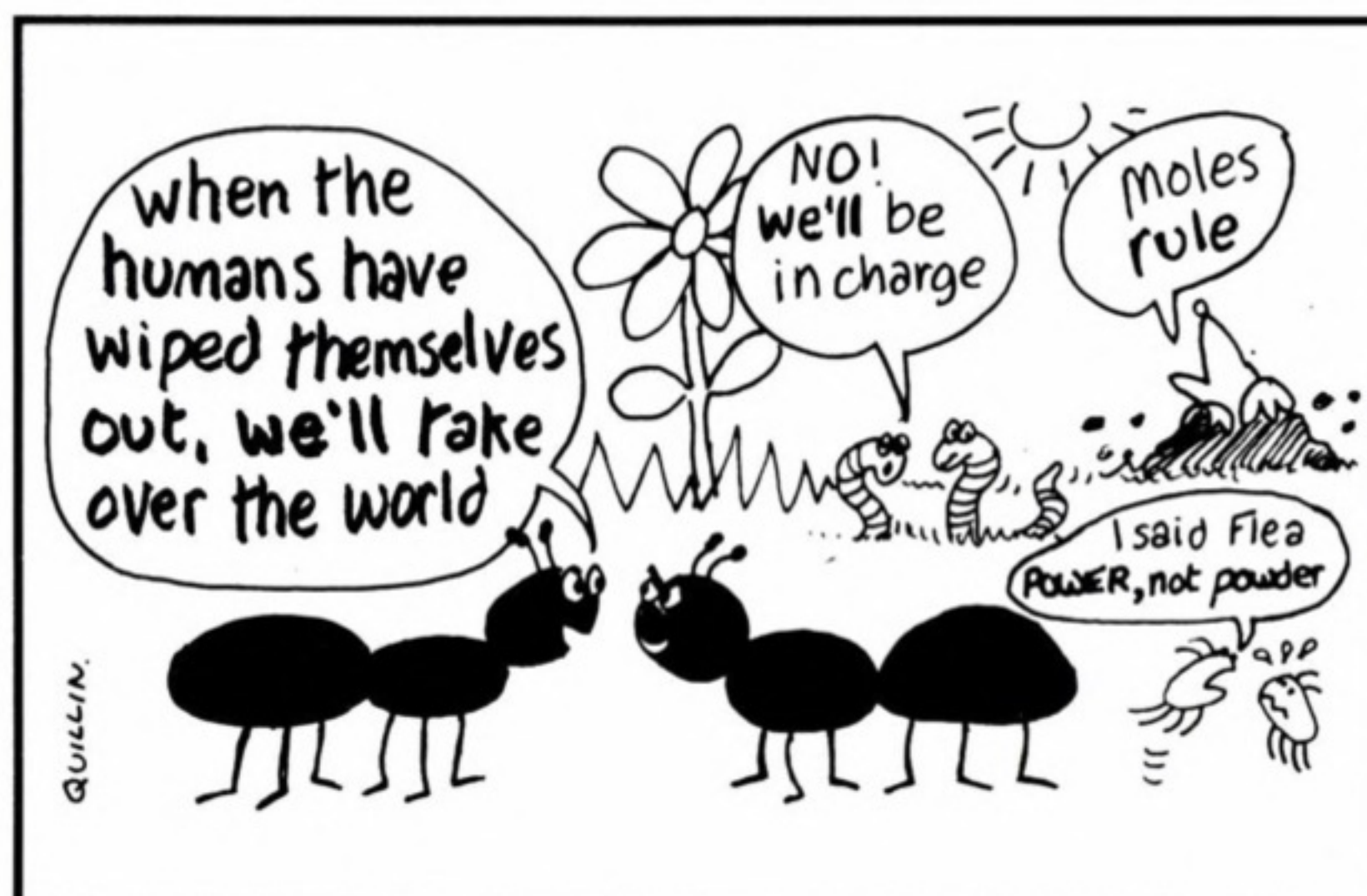
Soft soap

I appreciate that information about ethical products is difficult to obtain (*Green Consumer* NI 203) but the Lux flakes you recommend are based on animal tallow. A visit to any Australian Woolworths store would have revealed Caring laundry liquid, which claims to be organic, 100 per cent biodegradable, not tested on animals, free from animal products and allergy-free. Australian readers might also find useful *The Green Consumer Guide*, by John Elkington and Julia Hailes, Penguin 1989.

Brian Crowley
North Perth, Australia

Planet dictates

It is not the planet that needs saving as your issue implies (*Green consumer* NI 203), but merely our own species. The planet is capable of looking after itself. It is highly unlikely that we could ever make the biosphere unacceptable to all organisms. We would have extinguished ourselves long before it got to that stage. And if the planet does want to protect itself, the best thing it could do would be to get rid of the one organism – humankind – that is working so hard to destroy the present balance. 'Save your children' would seem a



more appropriate title for the magazine, or even 'Save yourself'. Let's drop the arrogant presumption that the planet is ours to save or destroy. What we must do is to preserve it in its present state.

M Tostevin
Freetown, Sierra Leone

Mine's bigger

Jeremiah Creedon's article on *The towers of the new gods* in NI 202 left out one extremely important point. The tallest buildings of a given society are erected by its dominant powers or institutions, and succeeding powers endeavour to surpass the heights reached by their predecessors in a ratio roughly equivalent to their relative strength. Thus in Paris, development can be seen to run rapidly along the following lines: Christian dominance: Notre Dame (the

church); Scientific dominance: Eiffel tower (the industrial landmark) and Capitalist dominance: La Défense (the high-rise suburb).

Kris Stenseth
Oslo, Norway

Opening doors

I was surprised and disappointed to see that your edition on *Modern architecture* (NI 202) had almost no mention of disability. The inaccessibility of buildings and transport systems massively discriminates against the disabled and is one of the main causes of their second-class status. Access – in the broadest sense, not just for wheel-chairs – is one of the major campaigning points of disability-rights organizations.

Reawyn Stone
London, UK

Sexual demands

Your issue on *Homosexuality* (NI 201) will make history for sure. But I would have liked to see more that was purely about sex. It is a shame that there could not be a little more explicit material dealing with sex among gays and lesbians in poor countries. The subjugation that gays and lesbians have to confront in the under-developed world is one of the most miserable attitudes of the modern world.

Jimmy Herrera
Santo Domingo, Dominican Republic

Nazis everywhere

Your issue on the *Palestine/Israel conflict* (NI 199) omitted a few key facts. First, all Arab States except Egypt are in a state of war against Israel and have been since they declared war in

1948. Second, without the West Bank, Israel is extremely vulnerable being only nine miles wide at its narrowest point. Third, Sarah Faith's article claims that Arabs have no connections with the Nazis except in the Israeli imagination. She conveniently ignores the employment of former Nazis by Arab governments, the use of Nazi propaganda print materials by Arab governments and the Nazi content of propaganda broadcasts from Arab radio stations. Fourth, compare Israel's response to the Intifada with that of Saudi Arabia to demonstrations by Iranians – 390 deaths in one day.

Colin Alfred
London, UK



The views expressed on the letters pages are not necessarily those of the NI.

LETTER FROM LA PAZ

Calling the spirit

Balancing body and soul is a juggling act involving cowdung, a slaughter house and occasionally a hat. Susanna Rance explains.

MY ten-month-old daughter lay soundly sleeping, tightly swaddled, on the bed. An orange and an apple were bound against her, inside the striped woven blanket. On her head, still damp from fever, was the woollen bonnet which minutes before had been used to summon back her spirit. 'Come, Nina, come,' Mami had called, waving the baby's knitted hat from the back door until the child's *ajayu* or spirit had returned, restoring wholeness and health to her body.

Although I was relieved to see Nina so tranquil after days of fretful illness, the hairs on my arms stood on end as I listened to her grandparents whispering and moving downstairs. A pungent smell of burning herbs and incense wafted up from the yard. No-one was allowed outside now, until the offering to the Pachamama – the Andean Earth Mother – had been consumed.

Had I been an anthropologist I might have been eager to witness the ceremony and record the muttered Aymara prayers. As it was, I felt panicked, completely foreign to this world of magic where sickness is believed to come from supernatural causes, and healing is an intimate affair, closer to religion than to medicine as I know it. I kept out of the way, partly out of fear and partly hoping that the rituals would have a better chance of taking effect without the interference of my modern-day scepticism.

Like most 'educated' city-dwellers in Bolivia I turn to herbal or ritual healing only when 'modern' tests and remedies have failed. For Aymaras of Mami's generation, traditional cures are the first resource, and doctors, laboratories and pharmacies the last. Talk of analyses, bacteria and viruses make little sense to someone who is convinced that the air, wind, fright or the evil eye are really to blame for sickness.

When my children got ill, Mami would always give me a few days

to try out my version of healing, nodding silently as I showed her the latest prescription. Then she would summon relatives and scan market stalls for herbs, waiting for the night that I would seek refuge in my room and allow 'la familia' to take over responsibility for my children's health.

Their father was caught between two worlds and so kept a foot in each, alternately chasing laboratory results and making a fire in the yard for the Pachamama's offering. According to Mami, he was living proof that traditional remedies succeed. At three years old he had been cured of a severe wasting illness by being buried up to the neck in fresh cow dung at the slaughterhouse. 'Larpha, we call the illness,' said Mami. Modern paediatricians call it malnutrition.

On my parents-in-law's farm in the Yungas valleys I experienced natural healing for myself after a troop of red ants marched into my gumboots and started biting my legs. I screamed with shock and pain. As I ripped off my trousers, el Papa grabbed my straw hat and started calling my frightened spirit back, a much more urgent matter than dealing with a few carnivorous ants. Later I was washed in a hot bath of quinine bark and made to drink the bitter liquid.

Every year after that, Mami came to treat my winter cough which reappeared with the first gusts of dry, cold, mountain air. Putting on a large kettle of water, she put me to bed and rubbed my chest and back with a sticky ointment. Then she ironed brown paper, stuck holes in it and pressed it warm against my skin. As I itched and crinkled under the blankets, she would wrap a woollen shawl around the hot kettle and refasten it tightly around me. Finally, having watched me sip her sharp herb tea, she firmly turned off the light and ordered me not to move until morning.

More than anything, I felt soothed by her confidence, her caring, the warmth and rest. To me, Mami's remedies embodied an equal dose of herbs and Tender Loving Care. But she confided one day that she had special healing powers because as a young girl, she was almost struck by lightning. Having been brushed so closely by death, she kept in her hands the power to call back the spirit and mend the imbalance between body and soul.

Susanna Rance has lived and worked in Bolivia for several years.

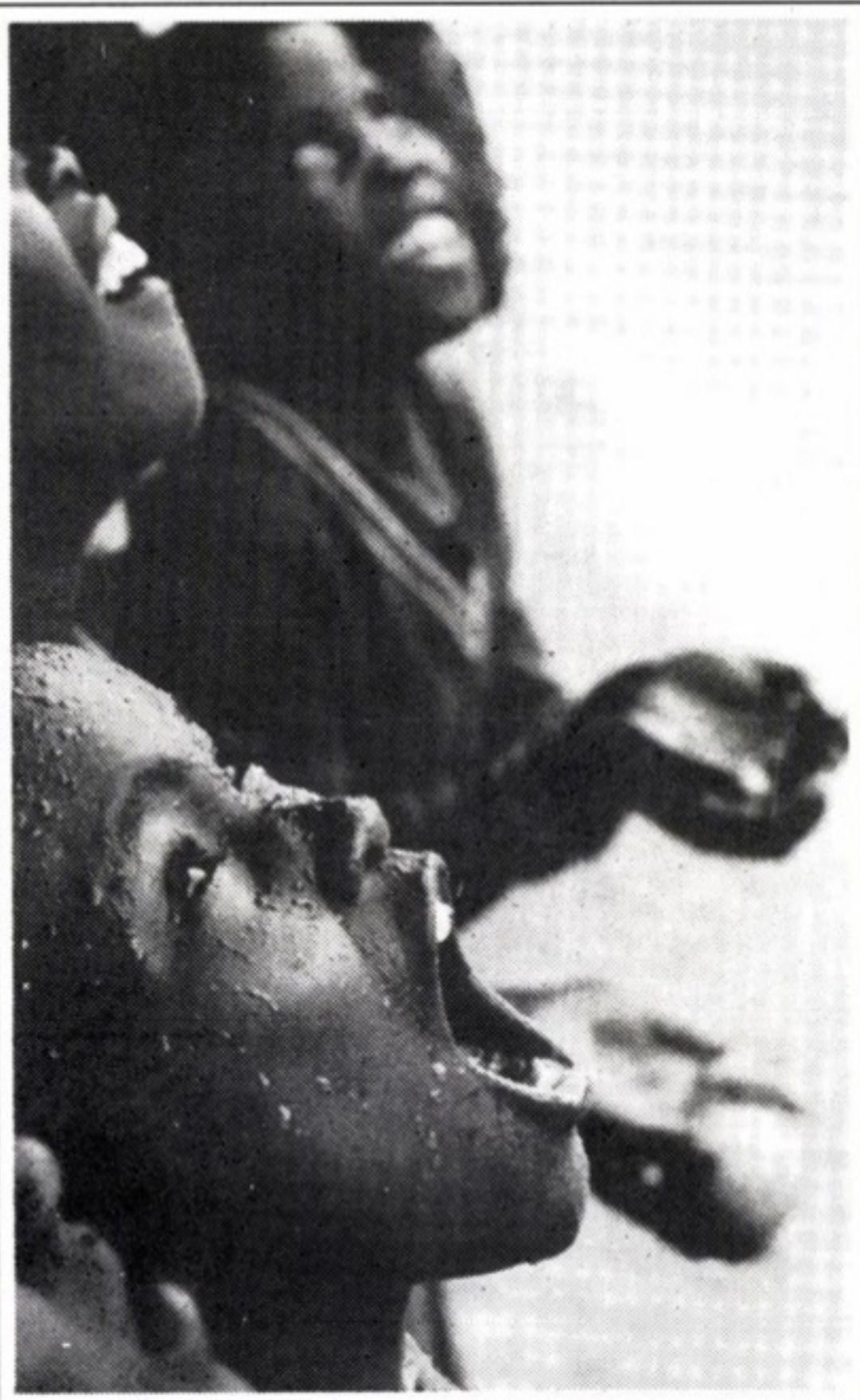


KEYNOTE

**Water is a political issue –
and has always been so.
Maggie Black explains why.**

THIRSTY FOR • LIFE

THE *POWER* OF WATER



WATER means life. Now there's a stock phrase, a cliché that only gains drama when it's attached to a dying explorer in a burning desert. Yet it refers to fundamental earth forces, to survival on the planet.

Those of us who live in water-rich lands take it too much for granted, this fluid as physiologically vital as blood, this substance that disobeys all chemical rules and without which nothing on earth could live or grow. The loss of our water supply, a crash in the hydrological cycle, would wipe us out more thoroughly than the explosion of any nuclear arsenal.

Water powers our bodies and our minds more elementally than food. An adult may survive weeks without eating, but without water the metabolism falters in hours. Water's cleansing and health-giving properties have always been revered, in the traditional world by priests and pilgrims, in the modern by the agents of public health and sanitary engineering.

Water falling as rain from the sky, water running through the intricate network of veins and arteries in the earth's body, fuels the growth of all plant life. It sculpts the landscape, taking soil from one place to another, distributing swamps and deserts between peoples and countries. No wonder taming rivers and damming lakes was long a pursuit of kings and maharajahs, even a US President or two. As a means of transport and a source of power, water commanded respect through the ages, making and breaking dynasties from

the Nile to the Euphrates, from the Ganges to the Po, from the Thames to the Zambezi.

Concepts of power have changed down the years. Science and technology have stepped in where primeval forces used to rule. The exercise of power in the modern world is a cerebral affair, a manipulation of economic and political forces which has little in common with the ancient battles against the elements. We have become so used to the taming of earth, fire and flood that we tend to overlook the potency the waters still exercise within our lives. But pressures are at work to bring humankind face to face with water's limits and rid us of our complacency.

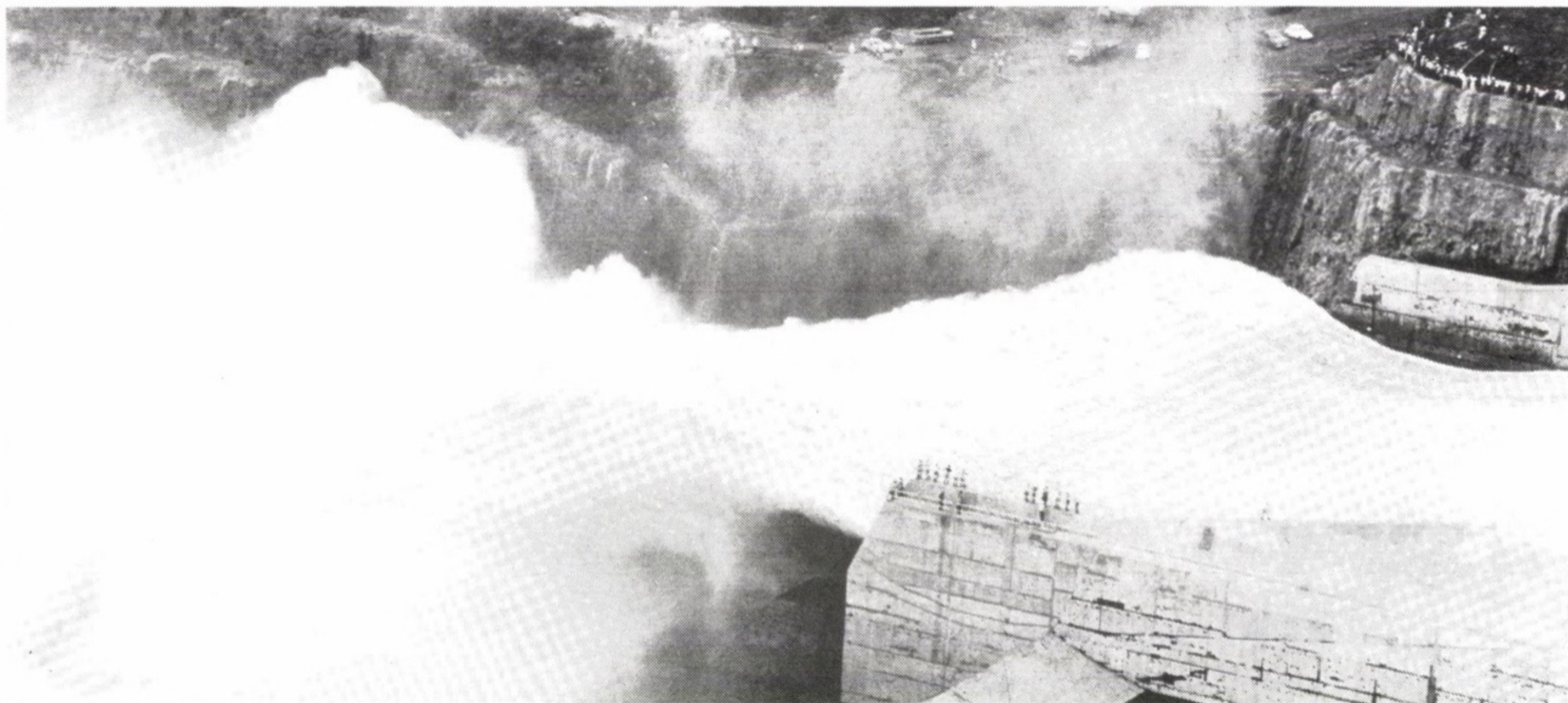
In the modern world we have actually

expanded the use of water, allowing it an even more pervasive influence in our lives. It has become an essential solvent and coolant in industrial and chemical processes, flowing and dripping through mining equipment and manufacturing plant to mould, blend, and wash most of the things we handle in our daily lives. It takes 100,000 gallons to produce a motor car, 1,000 to put a pound of beef on the table. Our domestic thirst has grown too. Apart from what we swallow, each Western household flushes around 100 gallons of water down the drain every day.

Our profligacy is not shared in developing countries, where over half of all households – or rather their womenfolk – must carry every drop of water home in a container. The load is heavy and water spilt is water lost. Where the stream is miles away, consumption per person is often close to the biological minimum of three litres a day. In those homes, 'water means life' is not a cliché but something dealt with as a back-breaking everyday reality.

The fundamental contrast between the way water is seen in the developed and the developing world is the contrast between quantity and quality. In most parts of Asia and Africa, it threatens either absence or over-abundance, and sometimes one after the other with bewildering rapidity. In the West, it's the contents of the tumbler we bother with. We don't seriously picture the tap running dry.

But wherever we are, water makes



The water that thunders. The River Parana, which forms the Brazil-Paraguay border, is translated into raw power by the Itaipu Dam.

Photo : Mike Goldwater/Network

involuntary neighbours of us all. What happens upstream affects those who live down, whether they are thousands of miles away or in shouting distance. And because water keeps moving and will not stay still, it cannot be marked out and laid claim to like land.

Water has to be a communal asset. For thousands of years, legal systems have accepted that there can be no ownership of running water.¹ Nonetheless, because access to water is precious, it has to have custodians. Some individuals may claim certain privileges because their land abuts the lake or stream. Government must say what those privileges may be and regulate rights to use water or to interfere with it. As pressure both on water's quality and its quantity builds up, the bargaining over water's role in economic and political life will likewise become more vociferous.

War and peace

The problem is explicit already in areas of the world which are water-poor.² Egypt's 55 million people depend entirely on agriculture irrigated by the Nile, none of whose waters originate within its borders. Food and drinking-water needs are rising along with population growth, while hungry Ethiopia, controlling the headwaters, is planning to divert more water for its own crop production.

Conflicts between nations over water are multiplying. Bitter wrangles have developed between India and Bangladesh over the flow of the two Himalayan rivers, the Ganges and the Brahmaputra, in the alluvial plains of their confluence above the Bay of Bengal. In the Middle East, Israel, Jordan and the West Bank all face a 'water gap' between needs and resources by the mid-1990s. Some observers postulate that war or peace in the Middle East will be governed by access to water.

Water holds another, hidden, threat: contaminants. One of water's most extraordinary qualities is its changeability.

It dissolves, absorbs, dilutes, concentrates, taking in a profusion of boarders. The stream passing my door may come past yours and in between there may be a flood, an epidemic, a pig farm, a factory. All these can change the make-up of the water, releasing pollutants into its biological net.

In the Western world, we expect engineers to tame and treat our waters into uniformity. About 150 years ago, when industrialization first produced immense urban squalor, medical scientists identified water as the carrier of deadly disease. From then on, the role of water as the world's inbuilt laundry and washing-up apparatus became formalized and engineered. The architects of public health set about tunnelling and flushing, creating an underworld full of drains, sewers, pipes and faucets. By the late nineteenth century it had become accepted that both potable water and waste disposal had to be laid on in the towns as an essential public service.

The achievements of the sanitary engineers warrant heroic descriptions in the history books. But today the waterways they diverted and sanitized are again under pressure because of the increasingly complex uses to which they are put. Discharges of effluent push their self-cleansing properties to the limit, threatening not only human health but the life systems of plants, birds and aquatic creatures which depend on the natural regime. As the waters are yearly buffeted by more outflows, more detritus, the technicians are having a hard time keeping up.

They argue about the 'maximum admissible concentration' (MAC) of toxic substances such as nitrates, aluminium and lead in water, how to test for them, and whether the 'cocktail' of toxicity is more important than the individual microgram count per litre. At one level, the hazards seem infinitesimal, and we are always being told not to worry about the quality of our water; but at another level

the hazards are very real. As the World Health Organization (WHO) points out³, chemical contaminants in the drinking-water supply, undetectable by the senses and only present at very low levels, may build up over a lifetime, accumulating toxicity in the body. As we intensify the use of fertilizers and pesticides so as to grow more food, what risks are we storing in our tissues?

Third World thirst

Meanwhile, people in the Third World can only envy the levels of health risk faced by those of us who can turn on a tap or flush a toilet. Most cities in Africa and many in Asia – Dakar, Kinshasa and Chittagong, for example – have no sewerage of any kind.⁴ Streams, gullies and ditches are where most human excrement and household waste end up.

People draw their drinking water from a standpipe which only operates for a few hours each day. Women still wash clothes and bathe their children in a muddy stream. In Nairobi, Jakarta, Bangkok and elsewhere, families are forced to purchase water from a vendor, paying ten times the rate charged to houses with mains connections (in Khartoum it is 18 times more expensive). In some parts of Sudan, half of household income is spent on water.⁵

As city populations rapidly expand, water and sanitation services are put under pressures unimaginable to those who built them. But at least fear of epidemic – repeating the terrible ravages of cholera in nineteenth-century Europe – encourages action in city halls. Lagos, for example, used to be a watchword for urban filth. Now there is a monthly 'sanitation day' on which moving around the city is banned: everyone must pick up a shovel and clean their neighbourhood.

But until very recently, the sanitary environment inhabited by more than 60 per cent of Third World people – the countryside – was left to take care of

itself. The woman carrying her container to the well, washing her laundry in the stream, leaving her toddlers to squat in the compound, had never seen a pipeline nor a drain; no faucet graced her village square, let alone her own backyard. At the end of the 1970s, 1.2 billion people in the Third World were without a safe supply of drinking water and 1.6 billion without any proper means of waste disposal.⁶

The Water Decade

In 1977, at a UN Conference summoned in Mar del Plata, Argentina, the need to provide water and sanitation to those denied this fundamental service was given international recognition. An 'International Drinking Water Supply and Sanitation Decade' was declared with the aim of providing 'Water and Sanitation for All by 1990'. International organizations – UNICEF, WHO, the UN Development Programme, the World Bank – and governments as well as voluntary agencies in both developed and developing countries all responded warmly.

Without the resources available to bring about the engineered model familiar in the Western world, those responsible for this new phase in the worldwide public-health revolution had to depend on the simplest, cheapest and least sophisticated of technical solutions: handpumps and pit

latrines instead of sewers and treatment plants. In so doing, they pioneered a whole new approach.

The essence of this new approach was that it involved ordinary people. Local communities were invited to contribute first in labour, later in management, to the construction and operation of modestly scaled water enterprises. Managers and engineers went back to the drawing board to find solutions which were appropriate from not only a technical, but also a social and economic point of view.

After many a false start, they are now sponsoring a model which, at its best, is driven by the consumers. This has replaced the old-style grand construction which was imposed from outside and only served to put money in contractors' pockets. But for all its cost-cutting and its modesty, the new model still requires construction and engineering.

Even if the falling rain and the water swirling in the stream cannot be owned, once water is engineered it cannot be free. Every sluice gate, every treatment plant, every pipe and pump, has a price. And as pressure on the finite supply of fresh water intensifies, that price is mounting.

As the water table sinks in India or Bangladesh, a more powerful drilling rig is needed to cut through the rock, a better pump is needed to lift water from the lower depth. Even at the bottom of the technological range, water asserts an economic muscle. Nowadays, no programme for Third World water supplies is without a plan for the community to levy itself to cover maintenance. This is a necessary provision, since scheme after scheme has fallen into disrepair because people feel no sense of ownership. Now that equipment installed is simple and low-cost the amounts involved are usually very small – the price of a replacement washer, for example. Usually the community is willing to pay provided it knows what the money is going on. Water is simply too essential for people to go without.

Elsewhere, people are becoming much more aware of clean water as a scarce resource with a visible price tag. Nowhere is this more true than in Britain, where the privatization of the water industry in late 1989 caused widespread uproar. Why such a universally unpopular measure had to be driven onto the statute book is still an open question. But one factor has to be the unwillingness of Margaret Thatcher's government to finance from public sources the investment needed to bring Britain's water supply up to the quality required by WHO standards and European Community regulations.

Meanwhile British sales of bottled drinking water have been soaring. At roughly 1,500 times the price of tapwater, the economists say this shows consumers are prepared to pay a high price for drinking water. It may also show that consumers, like those in the Third World paying a levy for repairing the pump, will



Running water at home – an Indian rarity.

pay for what they feel they control. Consumers in Britain no longer control the water utilities; when prices of tapwater rise and shareholders and corporations are the ones to benefit, the political uproar will surely begin again.

A new era

From far off, the sound of the waterfall plunging hundreds of feet into the gorge below is the sound of muted thunder. Raw, naked power cascading in a boiling white spume, boring its way downstream, spreading out into stillness and narrowing into rage again. For too long, many of those whose lives depend on the power, the productivity and the health-giving properties of the waters have behaved cavalierly towards them.

Now, the water-affected are awakening and their voices are gradually being heard. People are protesting against the dams which destroy ecological systems; they are fighting the chemical pollutants which poison waterways; they are asserting control over the installations in their villages; they are outraged at the privatization of a vital service which should never be used for profiteering.

All of these protests have the same background message: water must remain a common asset, regulated between and within societies for the benefit of all. With muted thunder, a new era in water power may just be dawning. □

Worth reading on ... WATER

Water and waste are normally the preserve of technicians – doctors, sanitary engineers, the occasional geologist – whose literary prowess is not typically directed at the lay audience. The Water Decade added to the literature: try **Water and Sanitation: Economic and Sociological Perspectives** ed Peter Bourne (Academic Press 1984). Those more interested in nuts and bolts will prefer **Community Water Development**, ed Charles Kerr (Intermediate Technology 1989). On British water politics, David Kinnersley's **Troubled Water: Rivers, Pollution and Politics** (Hilary Shipman 1988), is circumspect in its analysis, highly illuminating in its broader perspectives; **Dirty Water**, Judith Cook (Unwin 1989) is a readable cry of rage. Sandra Postel's **Worldwatch Reports** tell all on global water scarcity. The dire need to clean up Third World cities is covered in **Squatter Citizen**, Jorge E Hardoy and David Satterthwaite (Earthscan 1989) and **In the Shadow of the City**, ed Trudy Harpham, Tim Lusty and Patrick Vaughan (OUP 1988). Good community development project examples appear in **Building Community**, ed Bertha Turner (Community Books 1988) and **Against all Odds** (Panos 1989). On dams, the seminal work is by Edward Goldsmith and Nicholas Hildyard: **Social and Environmental Effects of Large Dams** (Wadebridge Ecological Centre 1984). And also on dams but easier to handle is the campaigning newsletter, **World Rivers Review**, put out by the International Rivers Network in San Francisco.

1 *Troubled Water: Rivers, Pollution and Politics*, David Kinnersley (Hilary Shipman 1988). 2 *Water: Rethinking management in an age of scarcity*, Sandra Postel (Worldwatch Institute 1984). 3 *Drinking Water Quality and Health-related Risks*, WHO Regional Office, Copenhagen. 4 *Squatter Citizen*, Jorge E Hardoy and David Satterthwaite (Earthscan 1989). 5 *Khartoum squatter costs counted*, article in *World Water*, November 1987, based on a report by the London School of Tropical Hygiene and Medicine. 6 *UNICEF and the 1990s: The Water and Sanitation Sector Workplan for 1990-95*, UNICEF New York, November 1989.



If only water weren't so obliging. It is prepared to embrace almost any particle on earth - bug, germ, soil, plant nutrient, chemical contaminant, salty mineral, fertilizer, nasty microbe, glorious sparkling sunshine - and pour it out all over everywhere. One person's spring of life is another person's poison.



Photo : Pam Isherwood/Format

The water privateers

Last year the British government sold its water industry into private hands. The policy was so universally unpopular it was hard to see who wanted it. Geoffrey Baker uncovers the coterie of business interests behind it – who are now exporting the model to the Third World.

LAST year Ibrahim Abdulkareem wrote to his local West African paper complaining that his town's new water system had not worked for a year and that its dam had then collapsed. At the time the contractor who built the dam was buying up waterworks in the great British privatization race.

Ibrahim will probably go on waiting for his water. In a neighbouring state, 49 villages have waited years for a water supply from the same contractor – a sup-

ply for which their government has already paid around \$50 for every man, woman and child.

Stories like this have not been heard in Britain since water supply was taken away from private contractors in the nineteenth century. And there is a connection with Britain's decision last year to re-privatize. Ibrahim's contractor, who is a close confidant of Prime Minister Margaret Thatcher, belongs to a coterie of financiers and exporters that pressed hard for water

privatization for business reasons.

Apart from this interest group, it is very difficult to find anyone in Britain who wanted water privatized. The public water industry had to be pushed, kicking and screaming, into the sale. In opinion polls, water privatization was universally unpopular. Even government supporters threatened rebellion.

In the annals of British domestic legislation, the story of water privatization is astonishing. At enormous political risk, the Government dismantled a public service that had lasted for six generations, together with a canon of water law representing the combined wisdom of some 47 previous governments.

From an international perspective, the move seems even more bizarre. There is nothing like it anywhere in the developed world. The French keep contractors on their toes by auctioning city water-supply franchises every 10 or 20 years. The Dutch have non-profit joint stock companies with city governments as key shareholders. Even the free-enterprise US leaves ultimate control with the municipalities. The British system is unique: privatization removes all local political control, sells the asset stock to shareholders, and actually requires the water company to make a profit.

Yet this controversial model for privatization is now being touted for urban water-supply provision in developing countries. The first privatization export contract is already in the bag. A consortium led by North-West Water will build an entirely private water system for the Malaysian city of Ipoh.

A dubious pedigree

The nearest parallel for Third World water privatization is, unfortunately, nineteenth-century Britain itself. Around 150 years ago, sanitary conditions in British cities were much like those endured today by the Third World urban poor. Water enterprises were usually incompetent and sometimes corrupt, providing piped or carted water to the few who could pay and safe water to no-one.

Waste disposal was even more haphazard. Sewage was allowed to collect in gutters to be removed by 'soil' contractors – but only when there was enough to make a profit. Life in the rapidly growing towns became intolerable. Cholera, drought, and scandal fuelled a debate about private profits and public health that went on for 50 years. Water and sanitation became central to the movement for civic improvement. Royal Commissions reported. And governments regulated.

Profit limitation was the first innovation, in 1847. Cholera epidemics – that in 1848 killed 3,000 Londoners a week – led to compulsory filtration in 1856. In the 1890s repeated water shortages in London's East End finally forced the metropolis to take water supply into public ownership. Significantly, the next

waterworks failure in the East End was in 1889 – with the industry on its way back into private hands.

For most of this century the public-service utilities evolved into a system of water boards and river boards staffed by civil servants and local politicians. The final phase was the 1974 creation of 10 regional water authorities responsible for the entire hydrological cycle from resource management to waste disposal. A few exceptionally efficient private waterworks survived, required to return most of their profits to the customer.

When Margaret Thatcher came to power in 1979 nobody thought this organization of water supply and sanitation so poor that it would have to be abandoned. On the contrary, the principle of integrated river-basin management was widely admired, not least by the new government.

The turnkey era

During the early 1980s, British companies began to promote the vigorous sale of water systems in the developing world with full Thatcherite backing. Contractors went in for the 'turnkey' approach. Instead of waiting for a government to invite competing bids for a project, companies made the first approach with a ready-made project proposal. This reversed the normal business relationship.

'Turnkey' projects are extremely profitable because they bypass conventional tendering – eliminating competition – and cut out interference from funding agencies, consultants and even the client. They can also go badly wrong, as Ibrahim has discovered, but the contractor is often protected by government guarantees which ensure he gets paid. In turnkey projects the contractor is king.

By the mid-1980s, the new breed of turnkey water contractor had become a powerful force in the British water industry. Some belonged to a loose association called the British Water Industries Group (BWIG) which wanted water privatized.

BWIG took the line that British contractors working overseas were losing business to foreign competition, especially the French, because of lack of expertise in running water utilities. The relevant British management skills were locked up in the 10 water authorities which were not designed to operate commercially. These skills were superior to those of the competition because of the experience with integrated river-basin management.

It was also clear that some of BWIG's members coveted the water authorities as lucrative domestic markets. They looked across the Channel at the big French firms and they saw their rivals virtually running cities – providing not just water and sewerage, but rubbish collection, street cleaning, lighting, funerals, even cable TV.

In 1986, the first draft of a water privatization law was published. It carried the stamp of a powerful but very narrow industry interest group, the exporting

contractors. It upset almost everyone else. The proposal envisaged selling off the 10 authorities intact, preserving the principle of integrated river-basin management. This raised opposition from farmers, heavy industry and the European Community, all of whom objected to placing pollution control in private hands. A revolt in the public water service itself led to the replacement of difficult water-authority heads with free marketeers.

The new plan announced in 1987 split existing water-authority functions into 'utility' and 'regulatory', selling the services and creating a public-sector National Rivers Authority for pollution control and resource management. The newly-turned water authorities now protested vigorously against the loss of integrated management. Thames Water complained that fragmentation would lose it overseas contracts and knock £10 million (\$16 million) off its flotation value.

The Water Authorities eventually backed down at the prospect of another round of sackings. But meanwhile trouble grew from another quarter. The British public, used to clean and cheap water for generations, were alarmed that privatization would make water cost more. The Government, whose case for all privatizations is built on efficiency and cost-reduction, wanted to shift the argument to pollution, to say that price rises were purely to do with water quality. Scare stories began to appear in the press.

Whether or not newspaper journalists were prompted onto the pollution track, they were soon responding to a growing public awareness that sewerage works were becoming decrepit and water supplies unsafe as government held down

public expenditure. In 1987, a serious disaster took place in Cornwall when mistakes occurred at a treatment works and 20,000 people were poisoned.

At the peak of the environmental debate, Greenpeace recruited 4,000 new members a day and revelations from Friends of the Earth merited prime-time television. Conservation groups could attack water privatization with well-funded research, and did so.

After three years of bitter debate the water authorities were finally sold off last November. To ensure the flotation was a success the Government not only extinguished six billion pounds (\$9.6 billion) in water-board debt, but paid over an extra 'green dowry' of £1.6 billion (\$2.6 billion) so that shares could be sold at a knock-down price. So £362 (\$580) of public funds per working person went into selling water short.

A model for nowhere

So what, in the end, does the British model of privatization have to offer the world? The magic ingredients of competition and efficiency are conspicuous by their absence. The purpose they masked – the opening up of new export opportunity for a handful of companies – does not seem to have reaped its hoped-for reward. The French companies, arch enemies of the contractors' lobby, have moved in to take the biggest slice of Britain's domestic water market.

Nonetheless 'privatization' continues to be held out in the developing world as a panacea for water systems. This is primarily an urban phenomenon because it is in towns and cities that the high-tech multinational contracting firms find profitable markets. But the philosophy is filtering into rural areas through agencies such as the World Bank. Descriptions of rural water-supply projects funded by aid nowadays contain the ominous phrase 'institutional reform', which means some degree of privatization.

Two years ago, the Ghana Water and Sewerage Corporation began removing the handles from pumps in villages that could not or would not pay new tariffs imposed under an IMF structural adjustment programme. The outcome was not more income for the Water Board, but more guinea worm in the villages as people reverted to their traditional polluted sources. Policies such as this were attacked by African Finance Ministers at last year's UN Economic Commission for Africa summit as 'wholesale, indiscriminate and doctrinaire privatization'.

Meanwhile, Ibrahim Abdulkareem is still waiting for his town's water supply to come on stream. It will be sad if, on top of all the other costs, his family's health pays its own heavy price. □

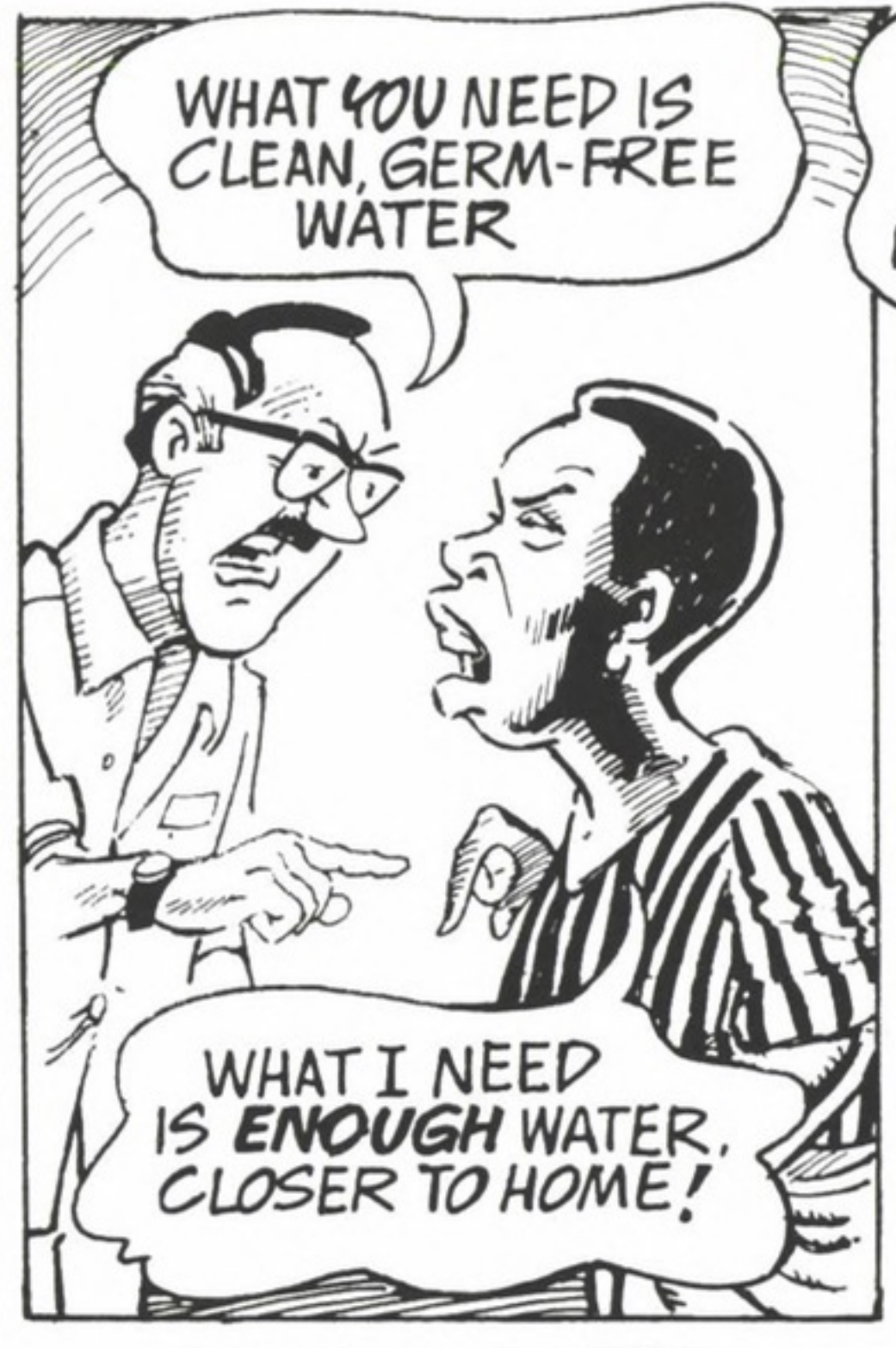
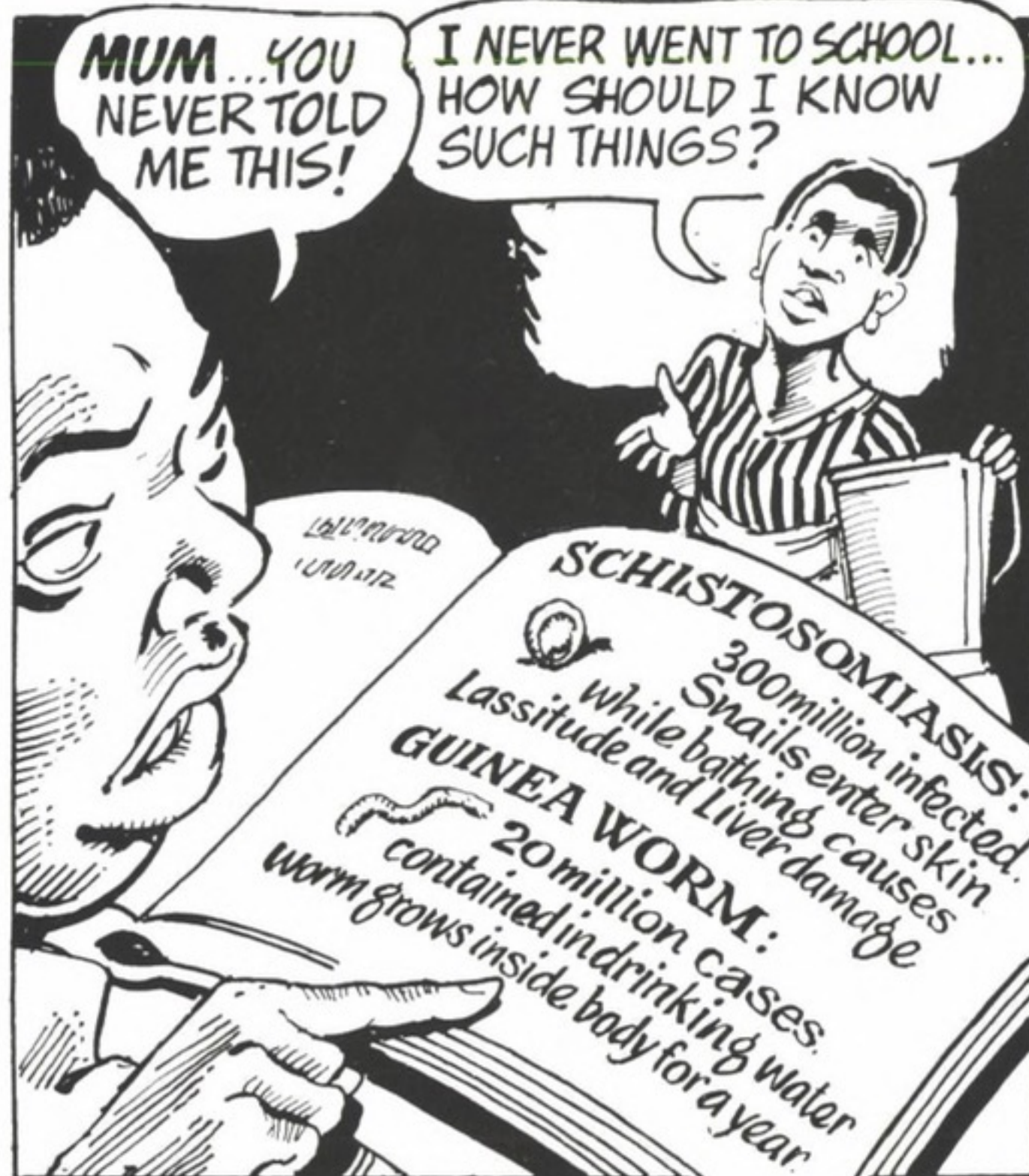
Geoffrey Baker is a freelance writer specializing in water and environmental politics.

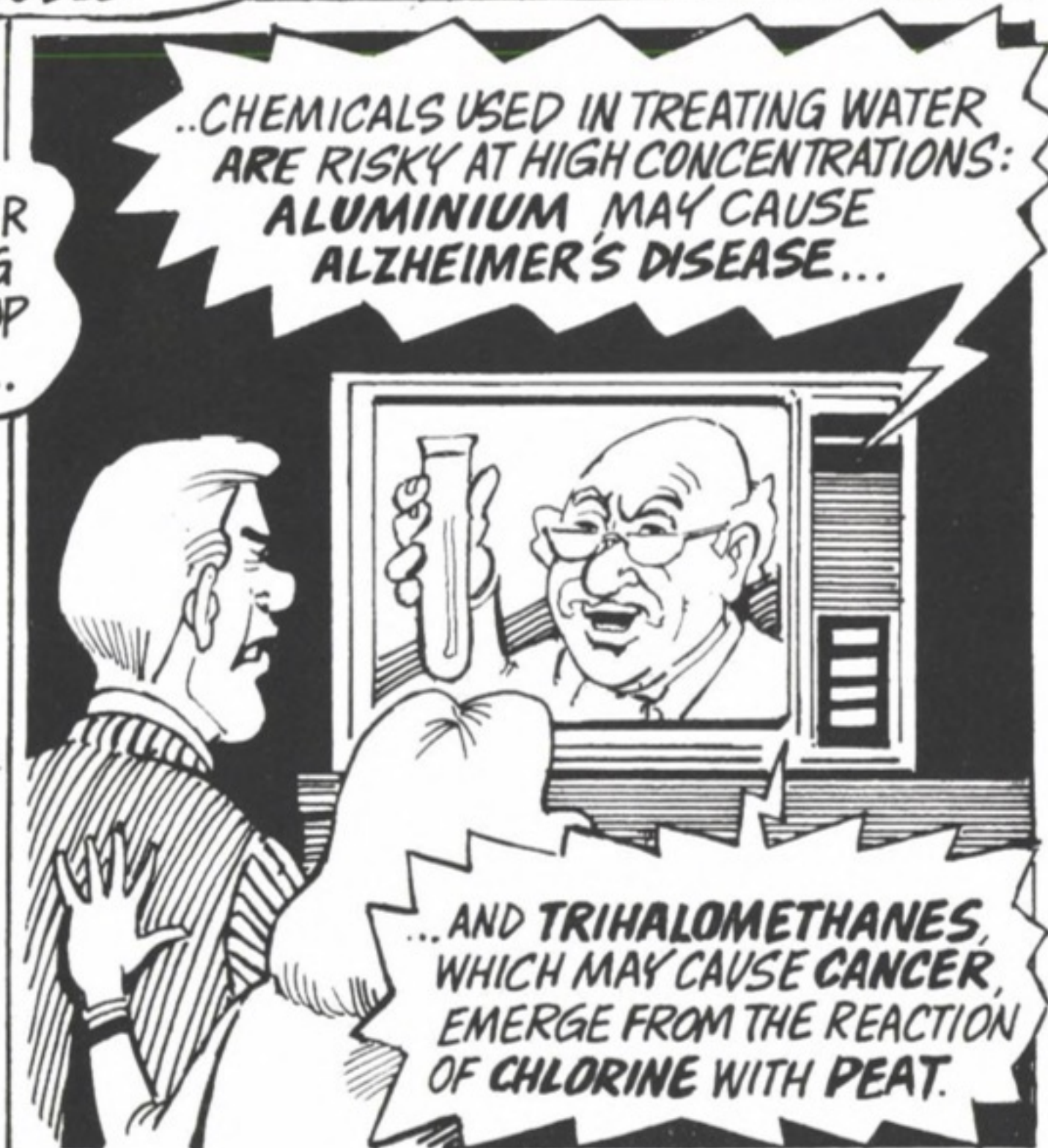
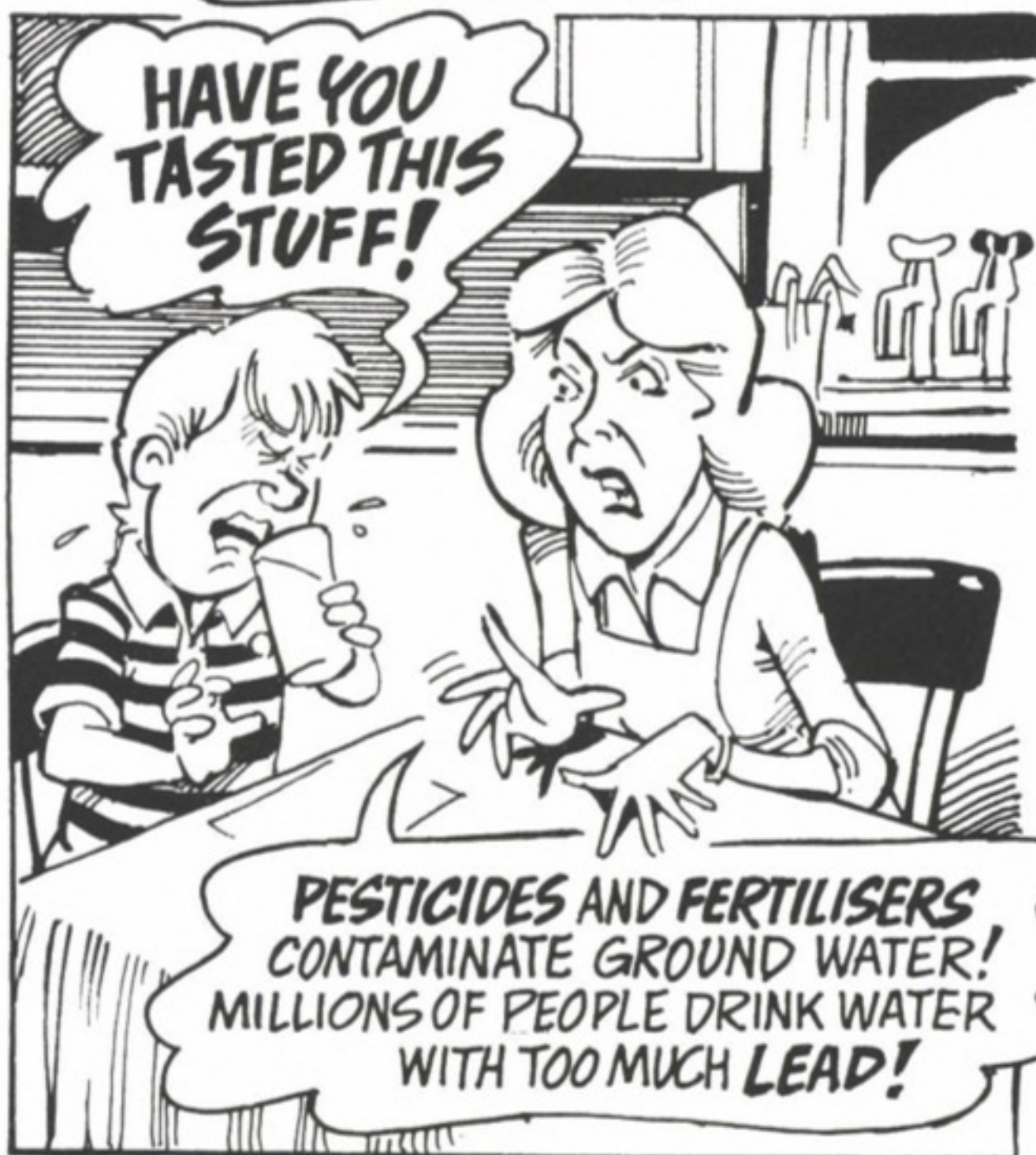
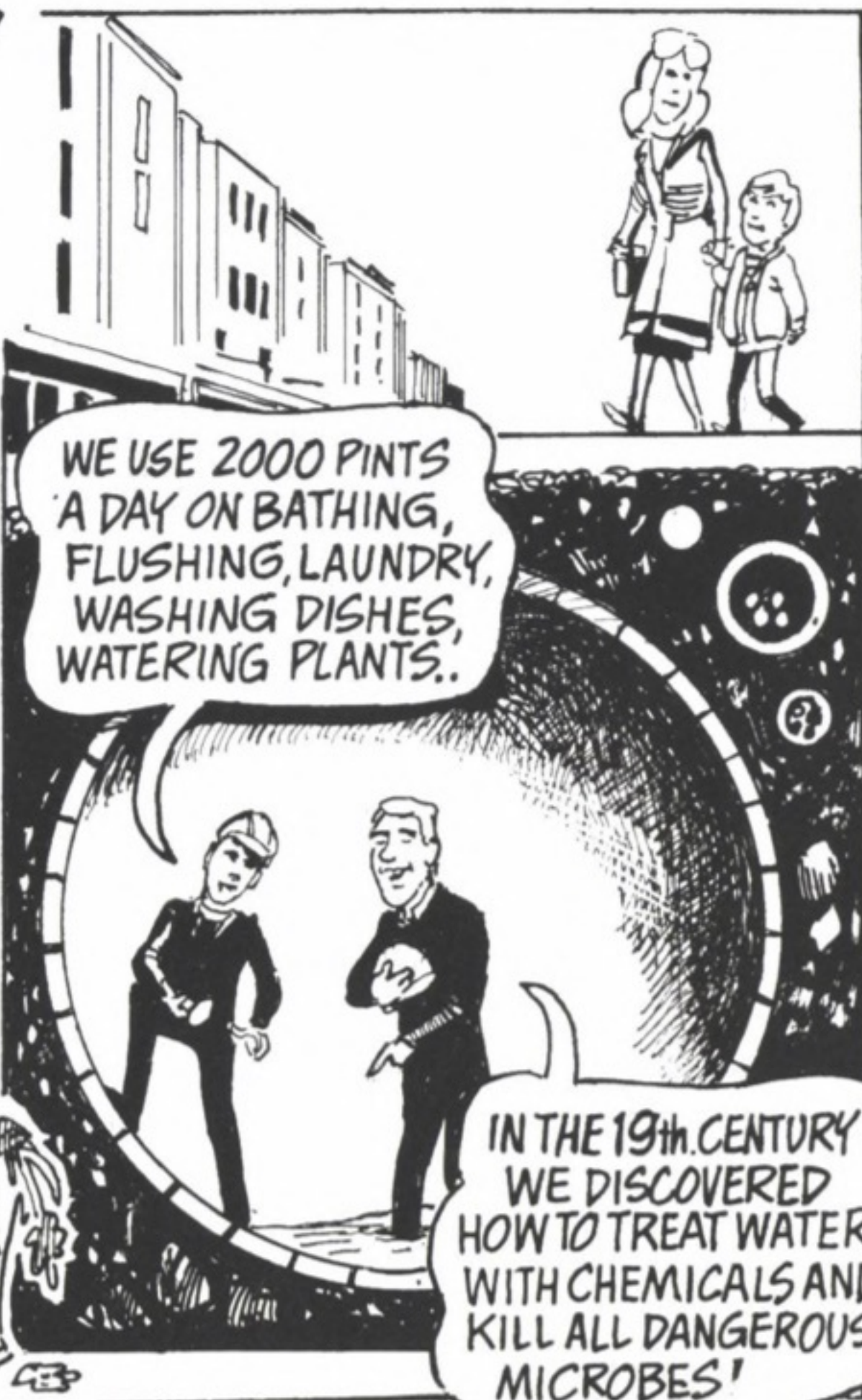


Punch's view of the River Thames in 1858.

Two tales of pollution

All over the world the water we drink is cause for concern. But people in the Third World and people in the West have different perceptions of what is wrong with it. So do the experts. Who is right – and is anyone listening?





Water in life and death

From time immemorial water has exercised a spiritual force in people's lives. But now our trust in it is ebbing away. Some reflections from Nepal by William Raeper.

At primary school, we stuck out our tongues to catch raindrops. It must have been an odd sight, all those children in the playground with their tongues stuck out. We were doing a term project on Water. Miss Dalmeny drew a chalk circle on the board.

'You see, class, a drop of rain falls here into the reservoir. It comes into the tap and then into you. When it comes out again,' (giggles) 'it goes down a pipe and into the sea where the sun shines and turns it back into a raincloud.'

Miss Dalmeny drew a wispy cloud rising from the Forth Estuary and blowing away. 'One drop,' she said, 'goes round the world. One drop can fall in Scotland, then in Africa, then in India. Wherever you go in the world, it's the same drop.'

'This,' said Miss Dalmeny in her most superior accent, 'is called a cycle. It is one of the Miracles of Nature.'

At Pashupatinath, the area of Hindu temples in Kathmandu, pilgrims pushed up and down the stone steps along the sides of the pool. Women in brilliant saris squatted and chatted while sadhus stood in a ragged line bathing. Their normal

saffron robes removed, these holy men wore torn Y-fronts and boxer shorts.

Respectable businessmen and their wives, barefoot, splashed themselves with care and a cluster of naked boys screamed and played on a floating tyre.

Around us, a crackly voice from a loudspeaker made strident announcements in Hindi and Nepali. It was the solemn festival of Shiurati, the Night of Shiva, on which Hindus believe that all sins are blotted out. Those cremated and thrown into the water on this day can escape reincarnation.

Rain fell continually and heavily on our Scottish playground. Rain was a nuisance – it stopped you playing football or going on picnics. If only God would turn his Big Tap off and let the weather improve. But Miss Dalmeny clapped her hands for attention. 'Water,' she declared in her most inspiring voice, 'is the Source of Life.'

Beneath the noise of the loudspeaker, leaves floated idly on the pool and the sun dazzled on the water. The pool was holy, filled with water from one of the rivers that joins the Ganges, the holiest river in

India, which Hindus believe springs from Shiva's head.

On the far side, the onion tops of the temples poked above the ugly brick colonnade blackened by continual cremation smoke.

'The water's filthy!' grunted a Californian.

'No, no!' said a pilgrim. 'The water is very holy, very clean!'

A double row of youths dressed in white dhotis appeared by a wrapped body as a soldier began a shaky rendition of the Last Post. People slowed to watch.

Water is Life. We begin our lives floating in the womb. Christians baptise with water to signal the start of a new life. Fonts stood in the back of churches to keep away the spirits, and holy wells brought healing if you drank their draft.

We are made of water, or almost. 'Two-thirds of your body weight and nine-tenths of your body volume is water,' said Miss Dalmeny in her authoritative, fact-conscious way. 'Humans can only live a few days at most without water.'

The dead man, the loudspeaker announced, was a general. The crowd edged closer as the corpse was prepared for cremation. The pyre of logs was laid crosswise. Cloth and orange garlands were thrown as offerings into the water. Farther down the Ganges at Varanasi, the holy city of the Hindu faith, there are at any time of day or night rows and rows of smoking cremation bonfires. The ashes



Spiritual tumult. As dawn breaks over Varanasi, Hindu pilgrims and worshippers gather to bathe in India's most sacred river, the Ganges.

from these join the living faithful performing their ablutions and doing their laundry in the waters.

'The water must be dirty, filthy!'

'No, no! The water is very holy, very clean!'

Not so long ago kelpies (water-spirits in horse form) used to frisk in Scottish rivers, and women used to dip their babies in pools to secure protection from the fairies. But the fairies have gone, and the kelpies have galloped away. We have science now. I trust the water that arrives in my home because it has been treated. The pilgrim at Varanasi, at Pashupatinath, trusts the water because it is holy.

Things are changing. Water, the symbol of life, now brings death. Rain falling in Europe strips trees of their leaves and slaughters river life. Pollution churns into the sea and drizzles from the sky.

The sun melts the brilliant snowcaps of the Himalayas into streams of silvery water, water that is sacred and clean. But in Nepal, many children under the age of five die from diarrhoea caught from polluted water.

One drop goes around the world. The same water that kills a tree in Europe and a child in Asia comes out of your tap.

The young men circled the funeral pyre three times before one of them, probably the general's son, set it alight. He stuffed bundles of flaming straw into the pile of wood while the soldier stood smartly to attention. Thick yellow smoke drifted across the pool.

I suspect the pool, but now we also view the water flowing from our taps and faucets with suspicion. The European Community murmurs about standards, about lead, about chlorine.

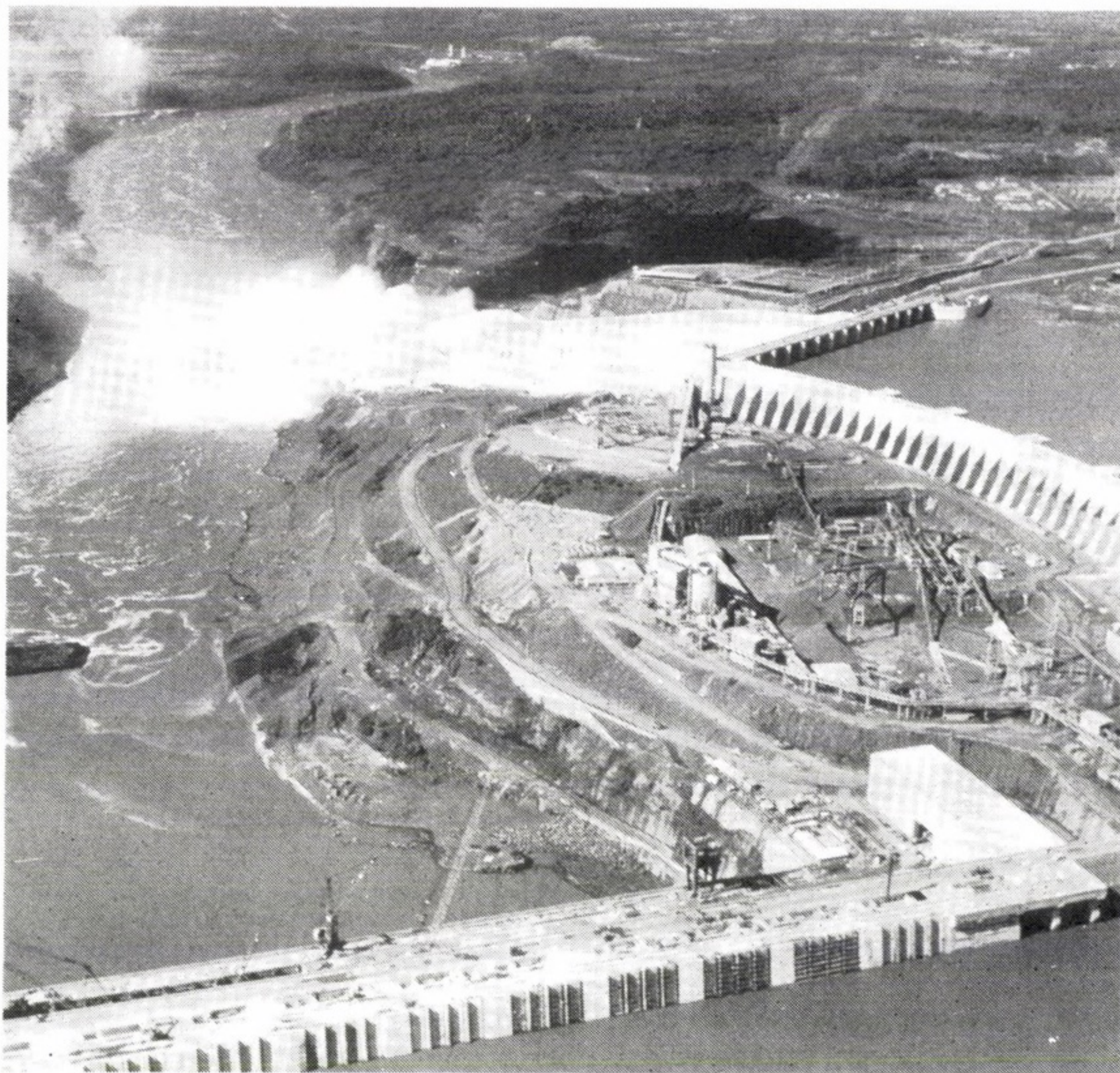
Still, in Britain at least, you can become an H₂O owner now. So every little drop of rain that falls belongs to someone if they want it. Advertisements appear in newspapers advising us how to reinvest money culled from water shares. Pennies from Heaven indeed.

People began to lose interest in yet another body being cremated. They had come all this way to wash themselves in holy water to gain darsan – blessing. Many filled their brass pots from the pool. They were taking holy water home with them to use in their puja or prayers.

As the last of the general went up in smoke, an aircraft thundered overhead leaving a trail of vapour against the clean sky. All eyes lifted as its engines drowned out the clamour of worship.

I wiped my sweating forehead and edged away in the afternoon heat. I felt I could do with a drink. □

William Raeper is a writer of fiction and educational books.



The world's largest hydro-electric project: the Itaipu Dam, on the Paraguay-Brazil border.

The writing on the dam

Dams were technological cathedrals, harnessing triumphant forces of water, power and earthly fertility for the benefit of humankind. What went wrong? Robin Wiseman explains.

THE mega-dam is well on the way to being busted. It has had a short pre-eminence: all but seven of the world's hundred largest dams were built since World War Two. But people power is now bringing the era of big dam construction to a close.

There are few sites ideal for big dams which do not already contain a cliff of clay, rock and concrete. Those that remain are mostly blocked, both because of the sheer numbers of people who would have to be relocated and because of mushrooming environmental lobbies. From Brasilia to Bangkok, engineers and politicians are faced with the reality that people are no longer content to submit meekly while their ancestral lands are flooded and their way of life disrupted beyond recall.

Funding agencies have also had to change their policies in response to mounting public criticism. The World Bank, for example, is now delaying dam projects while their environmental impact is properly assessed. But even leaving aside ecological considerations, the sheer financial impact of these monster projects can be devastating.

Building a dam can take years, even decades. This is hardly surprising given

their phenomenal size: the highest of them (on the Vaksh River in the USSR) reaches 300 metres. The venture is full of risks, but companies in Europe, North America and eastern Asia have grown fat specializing in the business. Several dams currently under construction are worth over \$1,000 million: the Yacyreta Dam being built by Argentina and Paraguay is estimated to have cost \$5,986 million, three times the original tally.

Because of the huge costs involved, any developing country contemplating a large dam must normally borrow heavily to finance the project. Consequently, dams that have failed to deliver their vaunted economic benefits have contributed enormously to the current debt crisis. At the same time, many have brought other highly undesirable consequences in their train.

It is these failings which have fuelled the growth of the anti-dams lobby, a people-power movement which has itself begun to take on the juggernaut quality of the dams it is trying to block. The problems this movement focuses on are fourfold: the displacement of people by the rising waters of the reservoirs; the loss of fertile farmland; the effects on health; and the ecological damage.

cont'd over

Photo: Mike Goldwater/Network

The population issue is at the heart of the massive resistance to dam projects on the Narmada River in western India (see box below). An almost revolutionary public awakening has forced the World Bank, as so often the key financial sponsor, back to the drawing board. At a recent international conference, Harold D Frederiksen, one of the World Bank's irrigation specialists, bemoaned the increasing numbers of people in developing countries and blamed them for the loss of good dam sites:

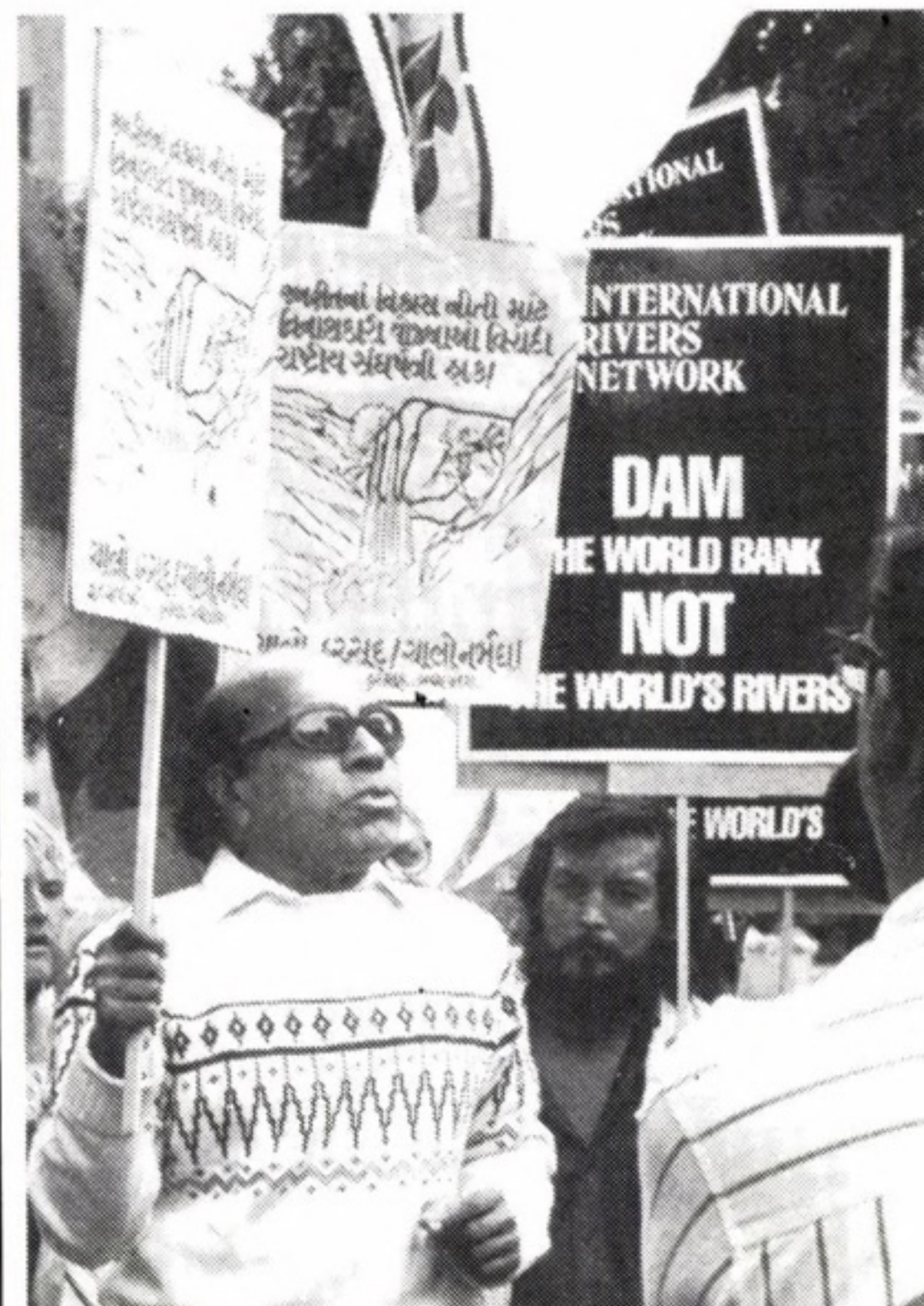
'Major transbasin water diversions are blocked on the Brahmaputra (in India and Bangladesh) because proposed canal alignments are congested by 1,000 persons per square kilometre or more. A majority of the reservoirs marked "to be developed" on Indonesia's maps will never be built because of dense land occupancy. And China will have to relocate millions of people if it is to construct the immense water schemes needed to match the scale of its needs.'

The main conflict is between farming people who need the land to live on, to grow food and to tend their livestock; and their governments – state or national – who want to flood the land to provide cities with power and water, or distant drylands with irrigation. And these days it is mostly the people on the land who are getting their way.

Take Thailand. In 1988, construction of the 580-megawatt Nam Choan hydroelectric project in western Thailand was stopped after a wave of protest threatened to bring down the Government. Last year, demonstrators protesting against the 250-metre Kaeng Sua Ten irrigation dam refused to evacuate their homes. Protest is growing in the eastern city of Ubon Ratchani over a decision to build a dam which will flood 117 square kilometres of land, destroy more of the country's dwindling forests, and inundate several ancient cultural sites. No wonder the Thais have suddenly started urging the Laotians to bring forward their long-term plans for developments on the Nam Theun River: they are desperately looking for new power sources free of disruption from environmentalist pressure.

On the health side, African dams have wrought much havoc. The creation of the giant Volta Lake in Ghana, and the Aswan Lake in Egypt, have both led to a huge increase in schistosomiasis, the devastating liver-fluke disease spread by the water snail. In Aswan, fishermen migrating from elsewhere brought the disease: a typical example of the social upheaval such large projects can cause.

On the ecological side, the classic demonstration of the case against large dams has been seen in the Amazon basin. Ignoring lessons in neighbouring



Narmada dam protest hits Washington DC.

Surinam, Brazil decided to flood vast areas of virgin forest in the interests of generating hydroelectricity. In 1988, the Balbina reservoir began to fill. The rotting vegetation and the richness of nutrients in the water are now causing ecological havoc. There is only enough oxygen for fish within 1.5 metres of the surface and the water hyacinth, a pernicious weed, is running riot.

The Balbina Dam is likely to flood an area of 2,000 square kilometres. Yet just 2.5 square kilometres of rainforest can contain, according to the US Academy of Sciences, 750 tree species, 400 bird species, 125 mammal species and 1,500 different flowering plants.

Equally alarming is the impact of Brazil's dams on its Indian population. In 1988-9, the threat to traditional homelands posed by the giant Altamira project on the Xingu River created an international outcry. Public opinion forced the World Bank to hold back an energy loan until the Brazilian authorities took certain measures to protect the environment.

The problem of power

All these examples illustrate a fundamental dilemma. How do emerging nations produce the electrical power to underpin development while avoiding massive environmental damage? It is accepted now that burning fossil fuels – coal, oil, natural gas – in conventional power stations contributes to the build-up of carbon dioxide in the atmosphere and thus to the greenhouse effect.

Hydroelectricity, clean and naturally powered, was thought the ideal alternative. But the huge turbines that are essential to heavy-duty energy production can only be driven by enormous water pressure; that can only be provided if vast areas are flooded; and such flooding is simply not popular.

Likewise irrigation. In many countries

'No dam shall be built!'

The damming of India's Narmada River is one of the World Bank's pet projects. But the 100,000 people threatened by it are fighting back – with some success.

THOUSANDS of people in western India, most of them peasants and indigenous people, have pledged their lives to stop construction of dams on the Narmada River. Crowds have gathered around the town of Harsud, whose 11,000 residents are threatened with resettlement when the town is flooded by the Narmada Sagar dam. They chant: 'We shall not allow Harsud to be submerged!', 'None shall be displaced!', and 'No dam shall be built!'. Altogether, the dam would displace around 100,000 people.

The protesters may get their way: the fate of the Narmada Sagar is temporarily in the balance. It is one of two principal dam projects on the Narmada, India's fifth largest river which rises in Madhya Pradesh and visits Maharashtra and Gujarat on its 1,300-kilometre journey to the Arabian Sea. The other major dam, the Sardar Sarovar, began construction in 1987. It has since provoked local protest at the site against the resettlement of 67,000 people.

The dams have provoked such an uproar both locally and internationally that their principal backer, the World Bank, has been forced to reconsider its support. Back in 1985, it approved a \$450-million loan towards the Sardar Sarovar's total estimated cost of \$3,800 million. Last summer, it threatened to suspend or cancel the unused

two-thirds of the loan unless the Indian Government accepted key environmental conditions, including relief and rehabilitation for displaced people. In the event funding continued, despite what Indian protest groups described as inadequate plans for the resettlement of those who face eviction.

Even with its facelift, the Sardar Sarovar project looks dodgy. A study sponsored by the Indian National Trust for Art and Culture (INTAC) condemned the dam as 'not economical, even under heroic assumptions' and concluded that it was likely to grind to a halt for lack of finance. It also found that the dam failed the economic viability criteria set by the Bank in 1985 at the time of its loan agreement.

Meanwhile, for Narmada Sagar, the World Bank has instituted a separate proposal for a \$70 million loan towards resettlement, but has placed both this and \$350 million towards the dam itself on hold 'awaiting resolution' of outstanding issues. But the Indian environmental movement wants none of it. 'We have stopped talking to the World Bank,' says Smitu Kothari, a key campaigner. 'It has become clear that they have no intention of listening to us. Now we must defend our homes and our livelihoods however we can.'

Robin Wiseman (with additional information from *World Rivers Review*)

crop production cannot improve without irrigation. But the water is often not available in the places where it is needed. Is there any alternative to damming a distant river and using the lake to feed long-distance canals?

Then there are the expanding cities, their thirsty populations and panting factories. The over-use of water from nearby sources and from natural underground reservoirs is already leading to supplies drying up or becoming polluted. In Beijing, for example, the water table is dropping by more than a metre a year and one-third of the wells are already dry. Many other cities in Asia are under intolerable water pressure. Can large-scale transfers of water from far-off sources be avoided?

The answer to these questions is: 'perhaps'. Alternative energy sources – wind, solar, tidal and wave power – are at present uneconomic, but if society demands it, the high prices will have to be paid. Alternatively, large hydro-electric projects could be replaced by millions of micro-hydro systems. More expensive for sure, but less disruptive. Franco Celso, from Italian micro-hydro manufacturer Ecowatt, estimates that a 10-kilowatt plant saves the equivalent of 21 tonnes of petroleum per year – not to mention stopping 70 tonnes of carbon dioxide being released into the atmosphere.

On the irrigation front, many successful trials of small-scale irrigation schemes are being reported around the world. These make better use than large reservoirs of the water they collect, as well as distributing their benefits to people more evenly. Rainwater harvesting – trapping rainwater behind low banks before it can flow away as run-off – is being more often employed in arid lands. Whether these techniques, together with better management, can produce enough extra food in the developing world remains to be seen.

In a world without big dams, drinking water will be as crucial a question as any, since supplies at the moment are only just keeping pace with the growing population. More work needs to be done on methods of conservation and recycling. Even the desalination of seawater might become more economic as a higher price is put on water.

Large dams are still being built in places where there are too few inhabitants to complain. But their time is running out. The Western economic machine that drove their construction during the second half of the 1900s will have to come up with new ideas. For as we flow towards the 21st century, water risks becoming the source of huge social and political conflict.

Meanwhile, the environmental clamour is growing... □

Robin Wiseman is a former editor of *World Water* magazine.

The grand embankment

Bangladesh's floods can be devastating. But an ambitious scheme to control the waters is also causing concern, as Annette Bingham explains.

No country is as profoundly influenced by water as Bangladesh. The land, culture and lifestyles of the people are shaped by three of the world's most powerful rivers – the Ganges, Brahmaputra and Meghna. These spread their floods across one-third of the countryside each summer.

The great rivers carry soil sediment from the Himalayas which they deposit in a huge, constantly changing delta at the head of the Bay of Bengal. They bring the fertility which supports 110 million of the poorest people on earth and they can also bring disaster to this low-lying land. The raw power of these unstable rivers is difficult to comprehend. Just one breach of the right bank of the Brahmaputra in the 1988 floods inundated 1,000 square kilometres of farmland.

For much of the year there is too little water. When the monsoon breaks, the flat landscape changes completely. Boats replace bicycles as the means of local transport and deepwater rice flourishes with the rising floodwaters. All of this is essential for the farming season. But when rainfall is exceptional and floodwaters rise higher than normal, the effects can devastate.

The farmers of Bangladesh are adept at making the most of their tiny plots of land. But with 11.6 people per cultivable hectare they are already at the extreme. Increased food production in an already hungry land means investing in dry-season agriculture. And this means protection from the floods.

After the disastrous floods in 1988 the Bangladesh government sought to determine whether modern engineering techniques and computer-aided technology could solve the problem. Aid organizations of all shapes and sizes offered flood-control assistance. When the reports were presented to the Bangladesh government in 1989, the advice was somewhat conflicting.

The French proposal was for embankments up to seven metres high to be built along the length of all the major rivers. They estimated the cost at \$10,000 million up front and \$150 million for annual repair and maintenance. Such expenditure would plunge the country into massive debt and divert money from other programmes.

By no means all the potential investors thought this was the answer. In the end the World Bank was asked to formulate an action plan. They did so, unveiling it in London in December 1989, and the \$150 million needed for pilot schemes immediately became oversubscribed. The plan envisages as a first step finding out what social and technical problems the embankments would cause.

Many informed observers are extremely sceptical about the scheme. Despite assurances from the World Bank's Vice-President for Asia, Atilla Karaosmanoglu, that 'the people of Bangladesh will be consulted at every stage', the British aid agencies involved in disaster relief after the 1988 floods do not believe that people at the grass roots will be adequately involved. By what line of communication can the planners conceivably consult the poor?

Steve Jones, the European Community's advisor on the action-plan team says that the embankments are bound to have a huge social impact. Under the French proposal, around 20,000 hectares of land would be requisitioned and 180,000 people affected. Some households would lose everything, adding their numbers to Bangladesh's already burgeoning landless population.

Jones also points out that the embankments will take decades to complete and other flood-protection measures – improved flood warning, better disaster management – will be needed.

No-one knows more about managing the flood waters than the Bangladeshi people who live perched above them and whose welfare depends upon them. And it is essential that 'experts' brought in to help should be ready to learn from the existing 'experts'. Their ingenuity includes floating hen coops and mesh fences to stop fish escaping from flooded fish ponds. Ideas like these could be more widely promoted.

Meanwhile there will be profound environmental effects from canalizing such vast bodies of water. Every step forward on the grand embankment plan will have to be watched with care.

Annette Bingham is a specialist in water issues and Asian affairs.



Photo: Anwar Hussain/Camera Press

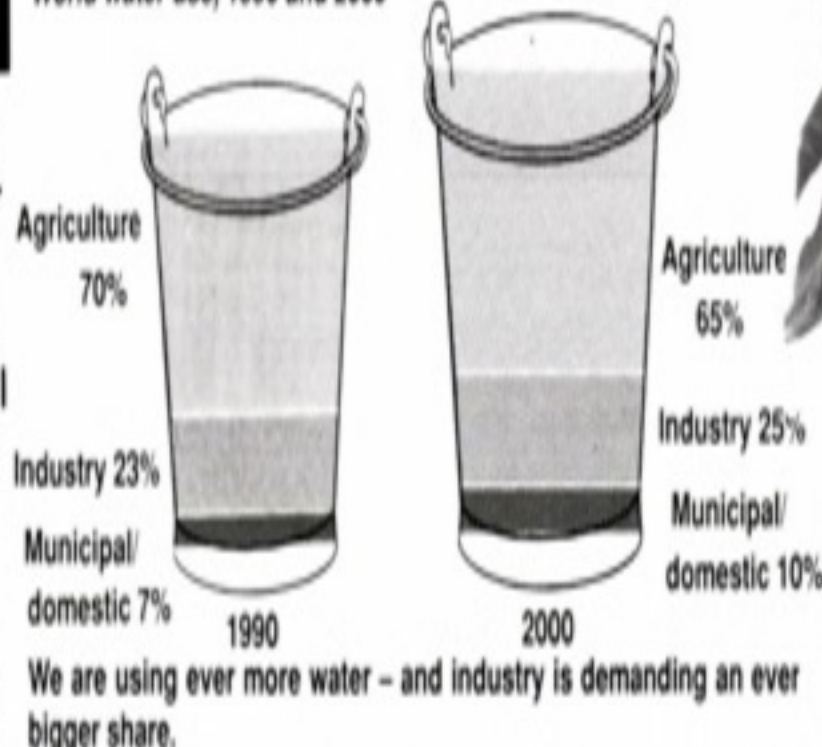
WATER - THE FACTS

By the end of the century global consumption of water will be ten times greater than it was in 1900.¹ Yet many people in the Third World are still without adequate water and sanitation. Here are the facts on water and waste worldwide.

WATER RICH, WATER POOR

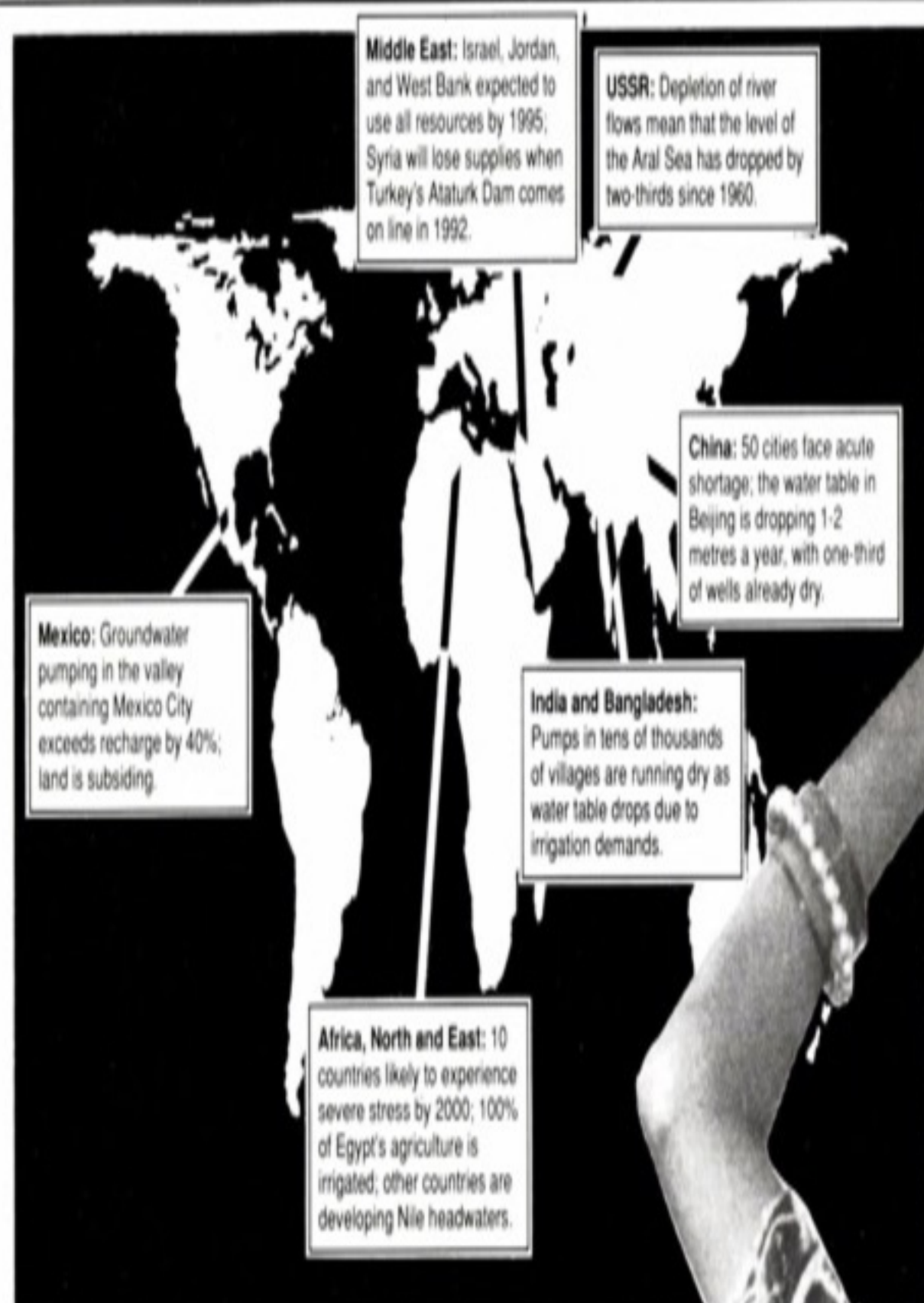
The annual renewable supply of water available for use is around 3,000 cubic metres per person. Under current climatic and population-growth conditions the supply per head will drop to 2,230 cubic metres by the year 2000. This is an alarming drop but is still more than enough given that our annual water-use in 1990 (averaged worldwide) is 750 cubic metres per person. Nevertheless, because the world's water is unevenly distributed, some countries will experience a 'water gap' by the end of the century.²

World water use, 1990 and 2000



RUNNING DRY

Heavy demand on water for irrigation - especially in Asia - is lowering water tables, putting city and even village supplies under pressure. Most irrigation methods are extremely inefficient, wasting two-thirds of water used and causing both waterlogging and land degradation. Competition between farmers and citydwellers - as well as between nations - is bound to increase.³



KILLER BUGS

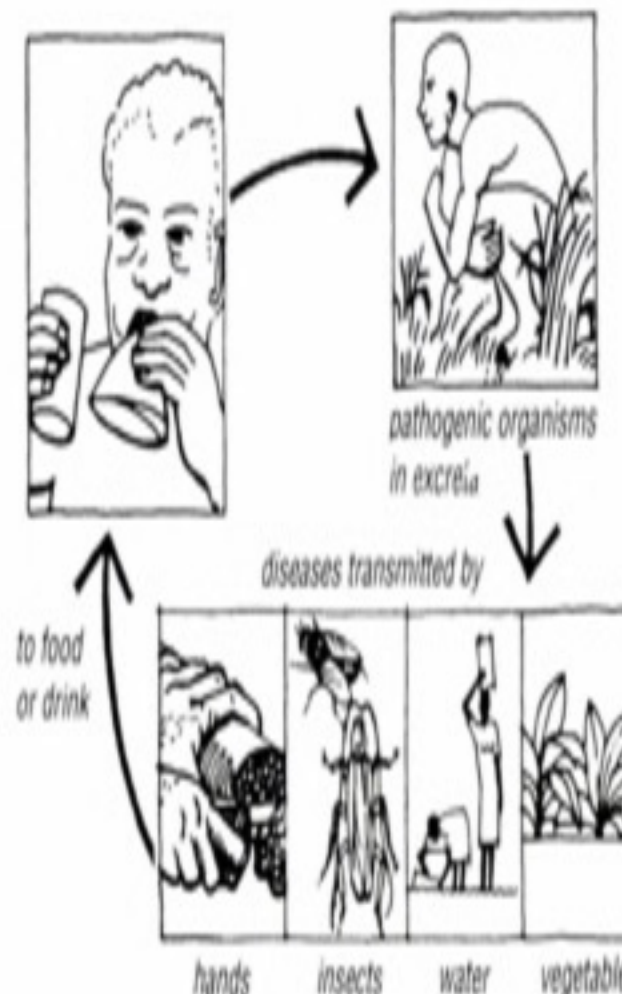
Proper hygiene and sanitation is at least as important as clean water in combatting the worst water- and dirt-related diseases.⁴

ORAL-FAECAL DISEASES

Examples: diarrhoeas and dysenteries, including cholera, *e. coli* diarrhoea, salmonellosis, giardiasis, amoebic dysentery; enteric fevers such as typhoid; poliomyelitis, hepatitis A; ascariasis, trichuriasis.

Disease toll: 5 million children under the age of five die annually of dehydration caused by diarrhoea; around 100 million people suffer diarrhoea at any one time.⁵

Prevention: Sometimes the bug is carried in the drinking water and passed on that way but dirty hands or food are at least as often to blame. Washing is very important.

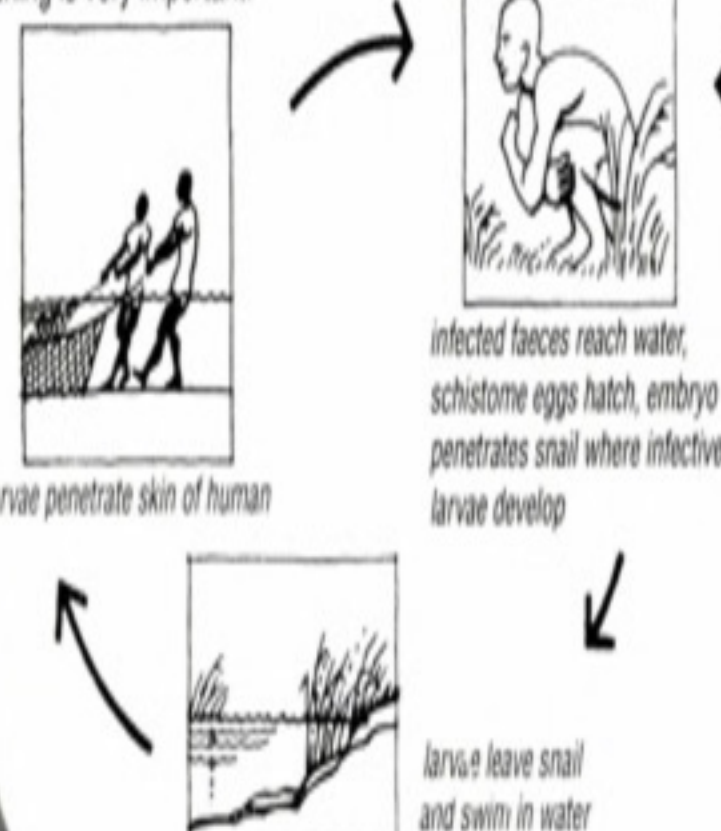


WATER-BASED DISEASES

Examples: schistosomiasis (bilharzia), transmitted by water snails; guinea worm (dracunculiasis), transmitted by water flea.

Disease toll: 200 million people suffer from the lassitude of schistosomiasis, mostly those living by slow-moving bodies of water;⁶ 10 million suffer from guinea worm and are out of action for the painful weeks of the worm's emergence through the skin.

Prevention: Avoid wading in the water or imbibing it; clear the snails or fleas from the water source; strain drinking water.

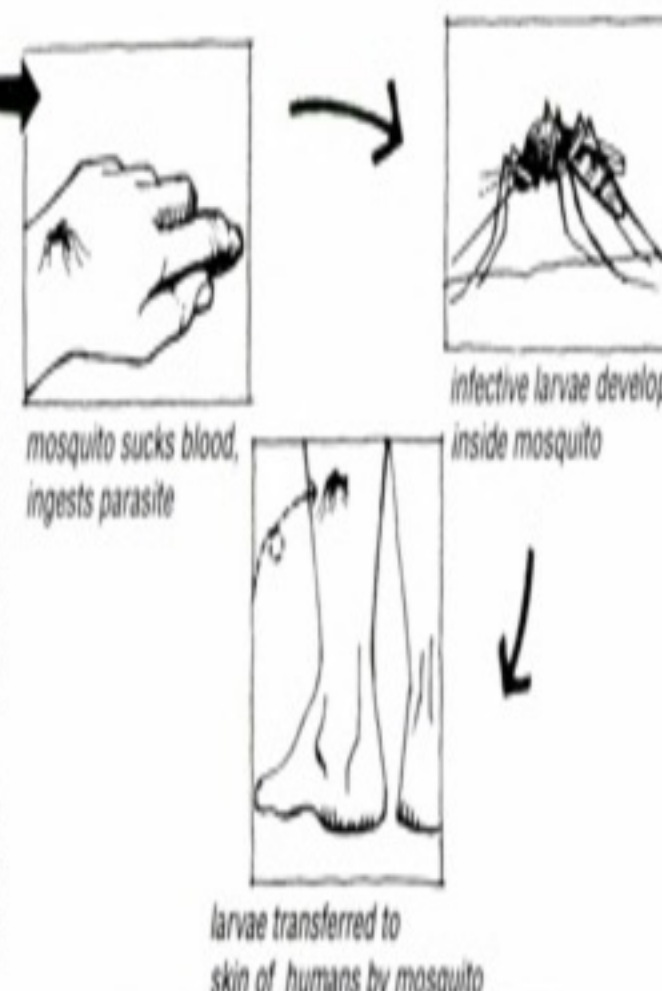


WATER-INSECT-RELATED DISEASES

Examples: malaria, sleeping sickness, river blindness, yellow fever. All are spread by flying insects - certain species of fly and mosquito - which breed in or bite near water.

Disease toll: Each year 800 million people suffer from malaria, one of the most pervasive and debilitating of the world's endemic diseases. It kills one million children under two in Africa each year. One million people suffer from river blindness (onchocerciasis) carried by blackfly, of which 340,000 are already blind.⁷

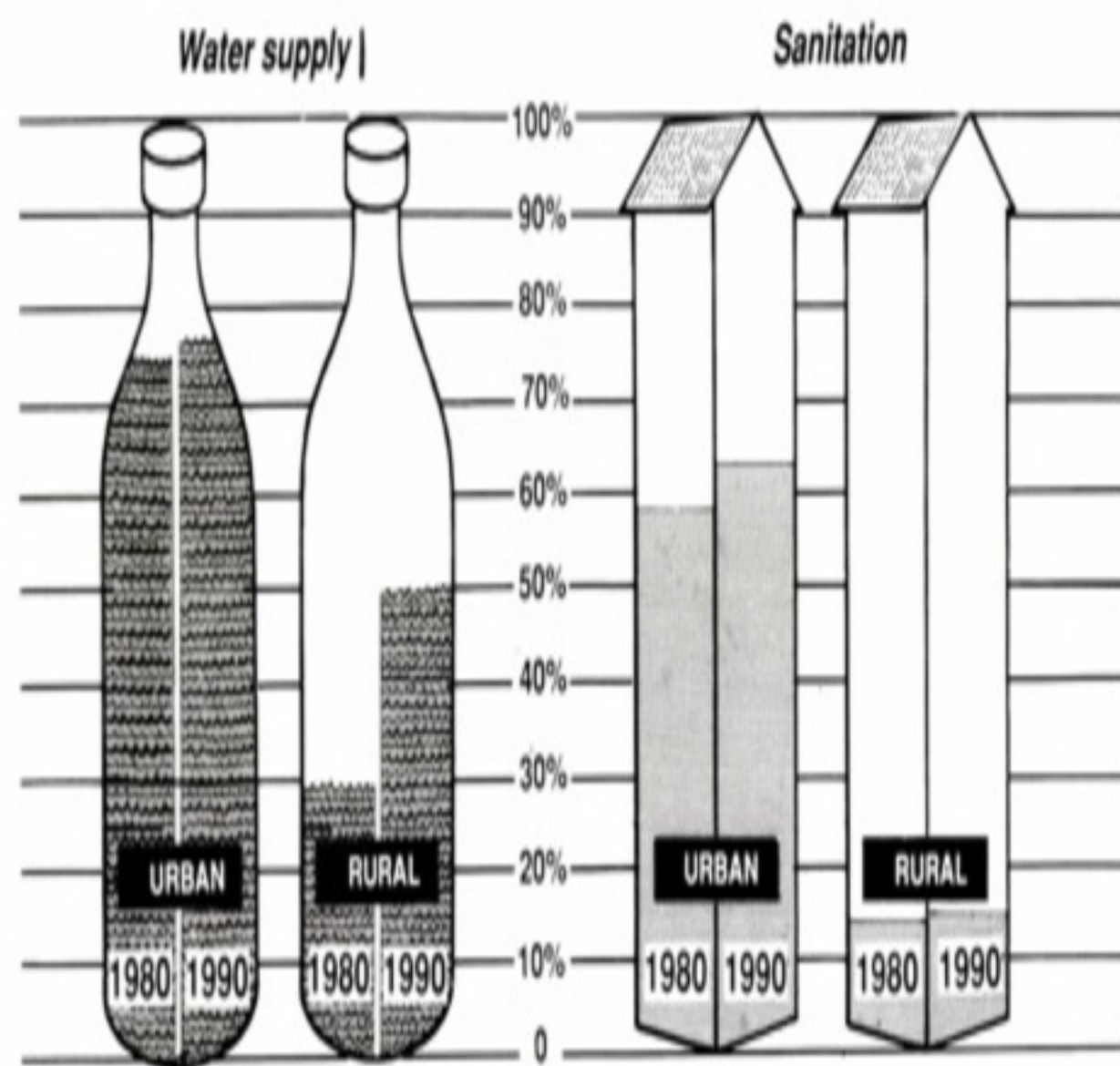
Prevention: The vectors - the flies and mosquitos - have to be controlled by spraying and drainage; or the parasites they carry eradicated by eliminating the disease in humans.⁸



A DECADE OF PROGRESS

The UN International Drinking Water Supply and Sanitation Decade was launched to provide 'water and sanitation for all by 1990'. This ambitious target was never realizable and 300 million more

people lack sanitation in 1990 than in 1980. But in percentage terms there has been some progress, especially with water: 50% of people in rural areas now have an adequate water supply compared with only 30% ten years ago.⁹



Two-thirds of the world's households use a water source outside the home - and the water-haulers are invariably women. A person needs 5 litres a day for drinking and cooking; 25 more to stay clean. The most a woman can carry in comfort is 15 litres.¹⁰ Water is heavy: many pots and buckets carried on the head weigh 12 kilograms when full; 18-litre plastic jerrycans now commonly in use weigh 20 kilograms. It is not uncommon for women in some parts of Africa to spend five hours a day on hauling water.¹¹

THE QUANTITY KEY

80% of disease in developing countries is related to poor drinking water and sanitation. Water quantity is even more important than quality when it comes to health - because a lot of water is needed to keep the body and household clean. The key to increasing the water consumption of the poor is giving them easier access to a supply. Until their distance from a source is reduced to less than five minutes' walk, water consumption does not rise significantly.¹²

HOUSEHOLD WATER CONSUMPTION¹³

Households with dishwashers, washing machines, and sprinklers: 1,000 litres a head per day

Households with a piped supply and taps: 100-350 litres a head per day

Households using a public hydrant in the street: 20-70 litres a head per day

Households depending on a stream or handpump several miles distant: 2-5 litres a head per day



¹ Investigations of land water resources, A Shikimov, Source, UNESCO, 1990. ² Water for Agriculture, Sandra Postel (Worldwatch 1989). ³ Water: Rethinking Management in an Age of Scarcity, Sandra Postel (Worldwatch 1984). ⁴ World Health Statistics Annual 1988, WHO. ⁵ Towards the Targets, WHO 1988. ⁶ Water and Sanitation for Health: Towards the Year 2000, UNDP. ⁷ UNICEF and the 1990s: The Water and Sanitation Sector Workplan for 1990-1995, UNICEF 1989. ⁸ Health aspects of water and sanitation, Sandy Cairncross, Waterlines, Vol 7, no 1, 1988. ⁹ Women, A World Report Debbie Taylor et al, UN/Methuen 1985. ¹⁰ Women and Water in the Developing World, WaterAid Fact Sheet 1989. ¹¹ Environmental Health Engineering in the Tropics, Sandy Cairncross and Richard G Feacham (John Wiley, 1988). ¹² State of the World's Children Report, UNICEF 1989. ¹³ Water, Sanitation, Health - For All?, Earthscan 1981. ¹⁴ Source, Vol 1 No 2, UNDP, September 1989. ¹⁵ Illustrations from Sanitation Without Water, SIDA (the overseas-aid arm of the Swedish government), 1980.

The Decade flows on

In November 1980, the UN declared that the next ten years would bring 'safe water and sanitation for all'. It hasn't happened. Yet everyone says the Decade was a tremendous success. Why? Brian Appleton and Maggie Black explain.

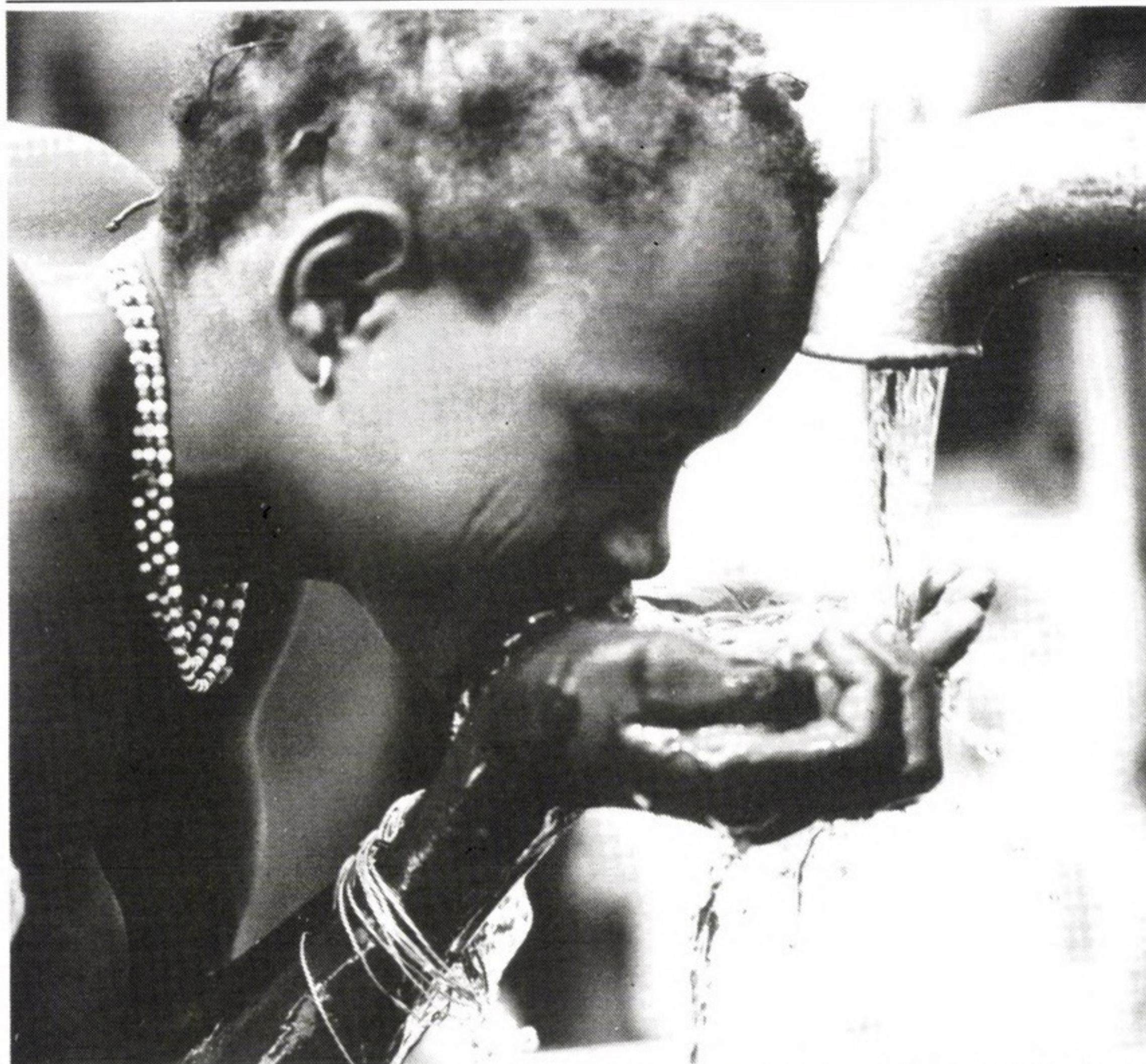


Photo: Maggie Murray-Lee/UNICEF

EVERY day in the 1980s, about 200,000 people gained a safe supply of drinking water, and 80,000 a better means of sanitation than a disgusting bucket or a walk in the fields. Faster construction of pipes, pumps, and pit latrines all over the developing world was the declared aim of the *International Drinking Water Supply and Sanitation Decade* – and it happened. The World Health Organization (WHO), the Decade's guardian of statistics, says that services were laid on at twice the rate of the 1970s.

Unfortunately, this advance is still well short of the lofty goal widely publicized when the Decade was launched: 'Safe water and sanitation for all by 1990'. The extra 715 million people with new taps and pumps have outpaced the 614 million population growth in the Third World – but the end of the Decade will see 300 million more people without sanitation than when it began.

Judged against its own performance criteria, therefore, it is easy to see why some will label the Decade a flop, particularly as the UN's then Secretary-General, Kurt Waldheim, announced at the time that the goal was 'eminently achievable'. When the UN General Assembly takes stock of the Decade's achievements in

November, no-one will repeat the boast. One of the early lessons was that setting unrealistic targets is counterproductive. All the Decade players – donor agencies, project managers, technical experts – have been struggling throughout the 1980s to escape from the notion created by the hype that anything short of facilities for everyone would represent failure.

As things turn out, the high priests of the water and sanitation ('Watsan') creed are unanimous that counting up new installations isn't a fair way to evaluate the Decade. Most of the 'safe water supplies' referred to in the old statistics were out of order, in disrepair or abandoned. Installing many more of the same would hardly have been a great leap forward.

India provides a classic illustration. In the mid-1970s, UNICEF undertook a survey of the rural water-supply programme in which it had been investing heavily since the turn of the decade. With understandable horror, it discovered that 80 per cent of the pumps installed were out of action. This prompted a quest for a sturdier, less breakable handpump and for a system of maintenance reaching right down into the village byways.

Within 10 and a bit years, the rural water-supply situation has been trans-

formed. Everywhere in the countryside the distinctive shape of the 'India Mark Two' now rears its pumphead. In 1980, just under a third of the country's villagers, or 162 million people, had a safe water supply. By the end of 1990, one and a half million India Mark Two pumps will have been installed, serving somewhere between 225 and 300 million people, or nearly two-thirds of Indian villagers.

Even more significantly, 80 per cent of the pumps are now in working order at any one time. This is not only a tribute to the durability of the Mark Two pump – nor even to the careful system of quality control the Indian Government has introduced, recognizing that orders for the pump are worth big money. It is also because local villagers have been trained in 'barefoot' mechanics and pump repair. The winning formula – appropriate technology, a standard pump manufactured in India, local maintenance, political commitment – is an extraordinary success story, and typifies many of the Decade's 'lessons learnt', as no doubt the participants in September's end-of-Decade Global Consultation in New Delhi will agree.

An expensive waste

The buzzword in the 'Watsan' sector – a buzzword borrowed from the environmentalist lobby – is 'sustainability'. Everybody now recognizes that past policies left a legacy of expensive and inappropriate water systems all over the developing world. And this has led to an era of unprecedented collaboration among aid organizations: the 'big four', the World Bank, the UN Development Programme, the WHO and UNICEF; government donors; and the voluntary aid agencies such as Oxfam and WaterAid. The symbol of the broken-down pump and the unused latrine has brought all these different members of the aid industry together in a way that makes for an interesting case study in itself, so unusual – sadly – is such a common sense of international purpose.

This collaboration has come about in an *ad hoc* way, gaining momentum rapidly during the later years of the Decade. It began in 1984, when GTZ, an official German aid agency, called a meeting to share ideas. Since then there have been many international get-togethers, leading to an astounding degree of agreement on the key ingredients for water and sanitation success.

In 1987, WHO and GTZ published a modest document entitled *Global Sector Concepts for Water Supply and Sanitation*. The concepts have no formal standing in any agency or government department great or small. Some contain elements of ideas that many experts and technicians would quarrel with. Controversy rages in such sub-areas of the field as whether water can actually improve health in a measurable way;

whether water quality counts more than quantity; whether the thoughtless promotion of privatization can possibly help poor communities; and what kind of technology is truly appropriate, from the latest in geophysical resistivity meters to the ancient hand-dug well.

There are six key ingredients of success, according to the latest wisdom:

● **Capacity to do what's needed.** Public health engineering outfits must have the capacity – human, financial, organizational – to build and run systems; they need suitable training.

● **Affordable and appropriate.** Economically strapped governments cannot afford expensive repair bills; technology must be sturdy, simple and cheap, and its repair affordable by the community.

● **Balanced development.** Water – much more popular than sanitation – must go with latrines and hygiene education; investment must favour low-cost schemes not high-visibility public works.

● **Community involvement.** Schemes benefit enormously from community management, and women especially should be involved at all stages.

● **Operation and maintenance.** Systems must be designed with long-term maintenance and its cost to the community in mind.

● **Co-ordination.** Scattered responsibilities at the receiving end must be co-ordinated and there must be information-sharing among all parties.

Put all these ingredients together and



Garfarsa, Kenya: jerrycans are more hygienic than buckets – but also much heavier.

you end up with a low-cost system that can be managed by the community and repaired locally – and, above all, is *sustainable*. The conversion on the Decade road is nowhere more clearly illustrated than at the World Bank where, amazingly, instead of concerning itself with high-technology urban filtration and sewerage-treatment systems, it took a leading role in a multi-million research programme to develop and test humble handpumps and latrines.

At the end of the Decade, the new technological solutions being promoted cost less than half, and sometimes a mere fraction, of those being installed when the

Decade began. Many of these low-cost approaches were originally pioneered by the humanitarians such as UNICEF and Oxfam. It is mostly their thinking which is now dominating the international 'Watsan' crusade.

The juggernaut rolls on

As the Water Decade draws to a close, the international community, heady with achievement, still faces the challenge of how the pumps, pipes and pits are to be dug, drilled and laid in order to reach a new target: 'Health (and Water and Sanitation) for All by the year 2000'. Some Decade activists radiate the impression that it's a downhill roll from here on in, a simple question of 'we've got the tools and we've worked out what to do; now give us the money and we'll finish the job'.

In fact, the growth of the collaborative juggernaut has now become almost too much of a good thing, and fears are being raised in some quarters that it represents a power base from which 'the big four' UN donors can force their directives down recipient countries' throats. A newly formed Collaborative Council of 'External Support Agencies' embracing all the international partners is adamant that the opposite is true. Their efforts are aimed, they say, at articulating 'common approaches' so as to provide developing countries with sensible and co-ordinated help *on request*.

Those requests will keep on coming through the 1990s and beyond. For out there, in the neglected rural landscape and the squalid city perimeters of the developing world, many of the pumps, pipes and pits which must be constructed and sustained to bring 'Clean Water and Sanitation for All' are still on the far side of the horizon. □

Brian Appleton is a technical writer specializing in water and environmental issues. He acted as rapporteur for the meetings of Water Decade donors in Interlaken, The Hague and Sophia Antipolis.

The long walk is over

The UN Decade is not all 'targets' and 'consultations' – it has changed some people's lives utterly.

MWANAISHA Mweropia, a 23-year-old mother of six from Mwabungu village in the Kenyan district of Kwale, used to make seven journeys a day to a well some distance away. There was always a line at the well, even at dawn, and the rule was that no-one might draw a second bucketful without joining the queue again. Everyone quarrelled and women with large families – which was most of them – were constantly tired. Mwanaisha coughed perpetually and had chronic chest problems.

In 1984 her life changed when the Kenyan Water for Health Organization (KWAHO) installed an Afridev handpump in Mwabungu – part of a special project to drill boreholes and install pumps in more than 100 local communities. Rainfall in this arid coastal area is seasonal and most streams and traditional wells dry up. Women were trekking long distances to dig in dry riverbeds. The picture is a familiar one in Africa where 60 per cent of women engage in grinding strain and hours of labour to produce a few miserable bucketfuls of water – which are often unsafe to drink.

Not only is the Afridev handpump much closer to Mwanaisha's home and far less

onerous to operate but the water is safe and her cough and chest pains have disappeared. The local KWAHO community worker, Mwanauba Omar, says that all water-related disease has declined. Before the project, schistosomiasis used to claim around 10 lives a year in Mwabungu alone and cholera was not unknown. Schistosomiasis, called *tego*, used to be blamed on adultery. No-one has died from it recently. And the number of diarrhoea cases has dropped by half.

The striking feature of KWAHO's programme, which has attracted much international attention during the Water Decade, is the degree to which it is focussed on women. The organization was inspired by women, is mostly run by women, and has fully involved women in the villages.

The Water Ministry drills the boreholes, which at up to 50,000 shillings (\$3,125) each are the most expensive part of the pumps. KWAHO gives the pumps and knits people together. Each community collects money – a shilling (six cents) a week per family – for repairs and replacements. To Mwanaisha Mweropia it is a small price to pay for a better, healthier life.

Winnie Ogana/Panos

The fiery serpent and the new party offices

The Water Decade turned a spotlight on a drinking-water disease which causes weeks of agonizing debility. Elizabeth Obadina reports from the Nigerian front.



Photo : David Kinley/UNDP

I DON'T think anyone can imagine,' says Professor Alphonsus Nwosu, 'how it feels to have a live worm crawling out of your body for the two weeks it takes to emerge. Every day you rub in oils and take something for pain. If you pull and the worm breaks, you will be severely poisoned, horribly ill. So you just keep coiling it round a stick until the whole thing is out. There is nothing I have seen that has a more agonizing and humiliating effect than guinea worm.'

Professor Nwosu is a tireless campaigner against the disease known in Biblical times as 'the fiery serpent'. In 1986 he was appointed Commissioner of Health of Anambra State in south-east Nigeria by the country's military rulers. Upon

Unwanted guest: the guinea worm begins to emerge from the foot of a young patient.

assuming office he launched a crusade against guinea worm (dracunculiasis), which is transmitted via drinking water. Guinea worm afflicts thousands of villagers in Anambra – especially in the rice-growing region of Abakaliki.

In the 1986/87 dry season, the crusade reached over 200,000 sufferers in Anambra. A health-education programme taught villagers that they had contracted their worms by drinking dense grey-green water from ponds shrunk by sun and drought and swarming with water fleas.

These tiny cyclops play intermediate host to the guinea-worm larvae. When imbibed by a human being, the larvae

burrow through the stomach wall and sail around in the lymphatic system before emerging fully grown a year later. They can come out of the breast, tongue, genitals – anywhere, though they usually emerge from the leg. The pain of the ulcer drives the victim to plunge the affected part in cool water, starting the cycle of infection all over again.

A curse of the gods

Villagers in Abakaliki were initially sceptical that guinea worm came from drinking pond-water. His Royal Highness Igwe Nwenyi, one of the local traditional rulers, describes superstition and ignorance as the main barriers to the disease's eradication. Over half the 75,000 people in his 'kingdom' used to be crippled regularly for ten weeks every dry season.

'I learnt to boil my water as a child,' says Igwe Nwenyi. 'None of my family ever contracted the disease. But our people would not copy me. I am a Christian and 95 per cent of them are pagan. They believed the worm was a curse sent by the gods or a witch, that people were born with it and that it came out depending on whether a person had hot or cold blood.'

In 1988 and 1989, a programme of 400 new boreholes began operation in Abakaliki under the UNICEF-assisted Anambra State Water and Sanitation – 'Watsan' – Programme. A new protected water supply has made all the difference.

'Seeing is believing,' says Mr Aniogor Joseph, a local primary school teacher. 'We would tell our people the pond water was bad but they wouldn't listen. Now we have a borehole which is nearer and much more convenient. This year, we have just one case of guinea worm in school compared to over a quarter of our pupils last year. January is also harvest time, and in past years villagers would be on their beds. They can see the difference between past and present.'

The Nigerian government was first alerted to the incidence of guinea worm 30 years ago by another professor, Sanya Onabamiro. He outlined how it might be prevented and cured but nothing was done. In 1990, with 653,492 counted cases in the country (there are probably many more) Nigeria has the largest guinea-worm problem in the world. It has been estimated that 50 million working days, 20 million school days, and \$20 million in rice production are being lost to the disease. Around the world there are between 10 and 20 million sufferers in a poverty belt of 19 sub-Saharan countries, India and Pakistan.

According to Dr Luke Edungbola, co-ordinator of Nigeria's first national guinea-worm conference in 1985, there are a number of links in the chain of infection which can be broken. The most obvious is to provide a protected source of water, but measures to stop people wading in drinking-water ponds, to cover open

sores, to treat water, and to filter it before drinking to remove the cyclops, are all good preventatives. In Anambra State, local by-laws now make it an offence for anyone with an open ulcer to wade in drinking-water sources. Commissioner Nwosu also organized the distribution of free bandages to cover wounds as well as local cloth for water filters.

'I wanted to show that it is possible to use indigenous capacities to cure a disease in this environment,' says Professor Nwosu. Experts agree that breaking the cycle of transmission can chase guinea worm from a community in only one year. 'If we solve the guinea-worm problem –

which is technically an easy one – then with the enthusiasm we create we can tackle leprosy, schistosomiasis and even the main killer, malaria, which is very difficult to combat.'

Politics, even in guinea worm

But Commissioner Nwosu's campaign has run into political difficulties. The eradication of guinea worm has become inextricably linked with the provision of borehole water supplies, itself a highly charged political issue. In July 1989, Lagos witnessed the launch of 'Target 1995, Global Eradication of Guinea Worm' by ex-US President Jimmy Carter.

US money poured into a programme drawn up by his Global 2000 organization, and Nigerian President Babangida pledged one million dollars.

The new attention to guinea worm led to an order from the Nigerian government that villages suffering the disease be accorded priority in the allocation of new boreholes. This decision drew bouquets from Global 2000 and brickbats from guinea-worm-free communities. Many such communities have since 'discovered' guinea worm in their midst in order to bring clean water closer.

Villagers are sceptical about health education; they want water supplies for convenience sake. But the guinea-worm card has entered Nigerian water-supply politics, and everyone plays it. Eradication of guinea worm, like smallpox before it, is a popular global target, especially with big donors. UNICEF and the Nigerian Ministry of Health have made careful efforts to champion health education, sanitation and social development as part and parcel of borehole schemes. But there is a risk that these will be washed away in a gush of water, forgotten in a blaze of publicity declaring the imminent eradication of guinea worm.

Commissioner Nwosu's other problems are even more pernicious. Despite the high level of government commitment both to rural water supplies and guinea-worm eradication, within months the authorities were robbing Peter to pay Paul: a different government programme pulled rank. In Anambra, all funds on current account for Watsan and guinea-worm eradication have been diverted by the state treasury. They will now pay for the construction of office buildings to house new political parties being nurtured by the military rulers for when they relinquish power in 1992.

As a result, during the last four months of 1989 the Watsan and guinea-worm programmes in Anambra were suspended. In January, UNICEF-donated vehicles, maintenance workshops, and drilling rigs stood idle. Project staff had not received their civil-service salaries. No more boreholes were under construction, in spite of the 95-per-cent success rate of the drilling programme to date, and initial enthusiasm was wearing thin.

It is likely that the donor agencies will exert whatever pressure they can to put the programme back on the rails. In the meantime, in Abakaliki all Commissioner Nwosu's gains are being put at risk as even the distribution of bandages and supply of cloth filters has ceased. In the country with the world's greatest number of guinea-worm sufferers, a showpiece programme to eradicate the disease has ground to a halt. □

Elizabeth Obadina is a regular contributor to the NI based in Lagos.

Testing the water

Why shouldn't the people who drink the water also monitor its quality? An account from the hills of Nicaragua.

GERONIMA Mendez Espinoza lives opposite one of the two hand-dug wells in the village of San Nicolas, Boaco. Since the discovery that the well becomes frequently contaminated she has taken on the task of testing the water regularly and adding a prescribed amount of chlorine.

This village in the hilly, fertile province of Boaco is one of several whose water supply is being improved and its quality monitored under a project run by the Nicaraguan Institute for Water Supply and Sewerage (INAA) and supported by the Catholic Institute of International Relations.

In San Nicolas and around 230 other rural communities, INAA carried out field tests for bacteriological contamination, using a 'portable laboratory': the Oxfam DelAgua water-testing kit developed in England by the Robens Institute.

The survey of Boaco's water in 1986 produced alarming results. Less than one-quarter of sources – usually hand-dug wells with handpumps – were producing water fit to drink. Disturbingly, many contaminated wells had been dug only recently in a drive to improve water supplies. Construction standards were good but neglect had caused the structures to fall into disrepair. Pumps failed so people resorted to drawing water with dirty buckets. Fencing was usually poor and animals wandered at will, contaminating the area with their excreta.

It was at this point that a community education programme identified local inhabitants such as Geronima Espinoza and enlisted their help. Preventing misuse of handpumps and standpipes was one goal; getting the community to understand how to avoid the contamination of their water was another.

Water and health issues were presented to villagers in public meetings with films, videos and flip-charts. Where communities were receptive, water committees were elected to help INAA workers in repairing broken-down systems and a small tariff levied from each household to pay for parts and materials. Despite economic hardship, these small contributions were insisted upon to underline the community's responsibility for its own water.

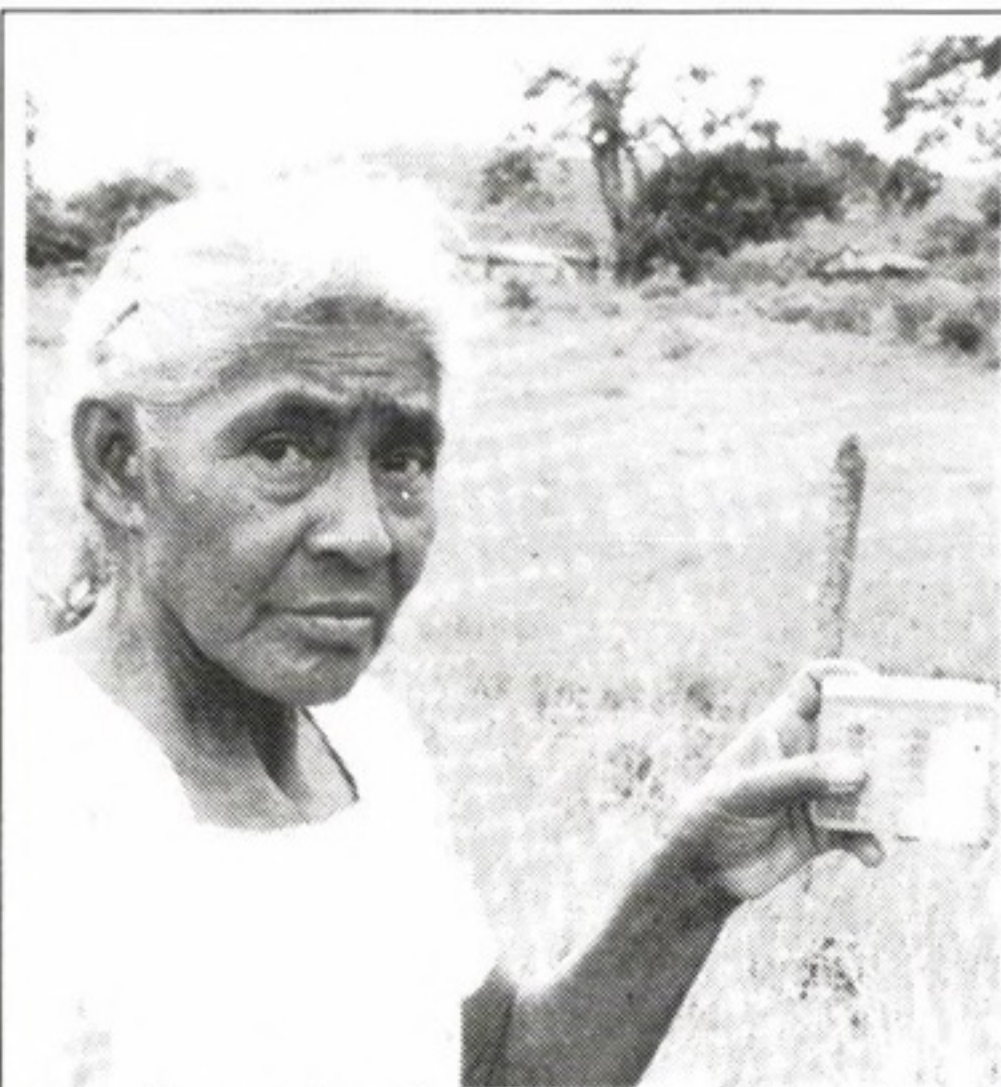
While the systems were restored, INAA workers began routine monitoring of the bacteriological quality of all supplies. Where this monitoring revealed persistent contamination – as at San Nicolas – regular chlorination was begun, with users measuring chlorine by a simple method. Geronima and the other monitors take a water sample, add a tablet, and if it doesn't

turn pink, add a certain amount of chlorine solution to the village well.

Although this seems a model of community development, resistance to chlorination was often very strong because users did not like the taste. Ines Gomez, who looked after the well at the other end of San Nicolas, was threatened with violence by some members of the village for what was seen as meddling and spoiling the water. In time, INAA staff visited and sorted things out.

In 1988, the lessons learnt from Boaco were incorporated into the national programme for water quality control. The five-year programme will cost two million dollars, with the Nicaraguan government covering 34 per cent of the costs. It is unlikely to be threatened by the recent change of government.

Nicholas Young



Guarding purity: Geronima Mendez Espinoza.

Simply... the magic of water

To the ancient philosophers, earth, air, fire, and water were the four fundamental elements. In the eighteenth century shocked scientists finally came to accept that water was actually nothing but a compound of two gases, hydrogen and oxygen. Yet the ancients' idea accurately conveyed the vital importance to all life on earth of this most magical of substances.

1. Where did water come from?

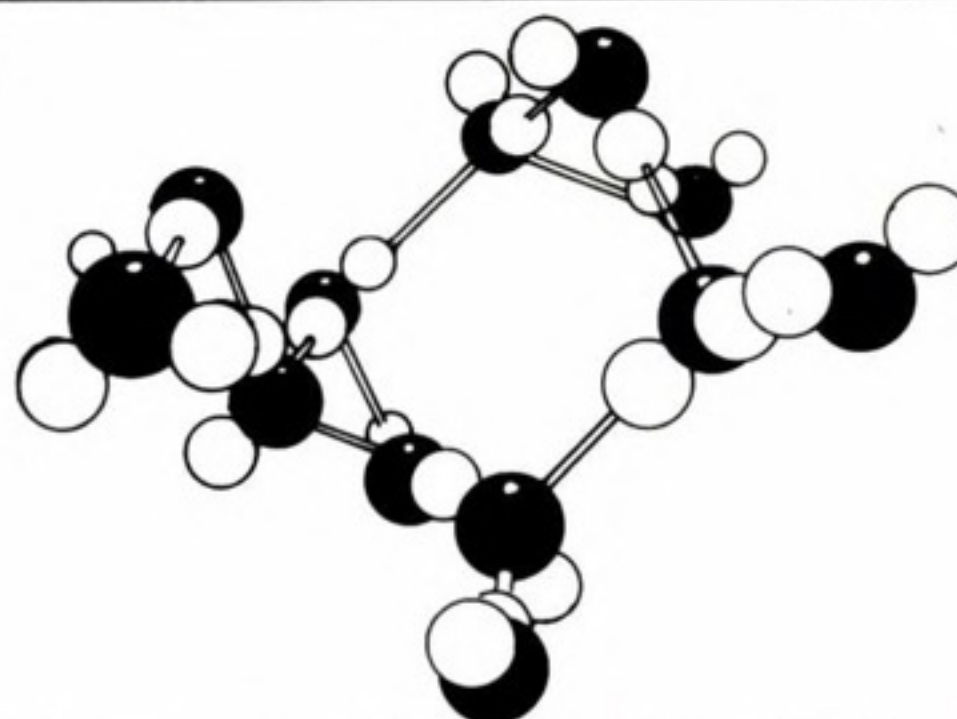
Millennia ago, heat in the interior of the young earth drove oxygen and hydrogen atoms out of combination inside the rocks in which they were contained. The newly formed molecules came to the surface in streams of lava and were then released as water vapour. Great clouds formed that rained once the earth had cooled and covered it with seas. So what are now oceans were once our rocks. These oceans cover 71 per cent of the earth's surface and have an average depth of six kilometres.

2. Liquid magic

Water has a very peculiar property: it is liquid at room temperature. So small a molecule, according to the organic chemists, ought to be a gas, like ammonia or methane. But water molecules find themselves strapped together by networks of hydrogen bonds, linking molecule to molecule by the power of their electronic attraction. This forces them to cluster together as a liquid instead of moving around independently as a gas.

3. The curious character of ice

Another chemical oddity is that water, unlike any other liquid that freezes, becomes less dense as it solidifies. Here again, the hydrogen bonds play tricks, holding the molecules of water apart as well as together, gripping firmly but at arm's length. This means that ice floats on water, with the ice forming or drifting on the surface of the drink, the sea or the lake. If ice sank and rivers froze upwards, aquatic life could not survive the harshness of winter in any cold climate.

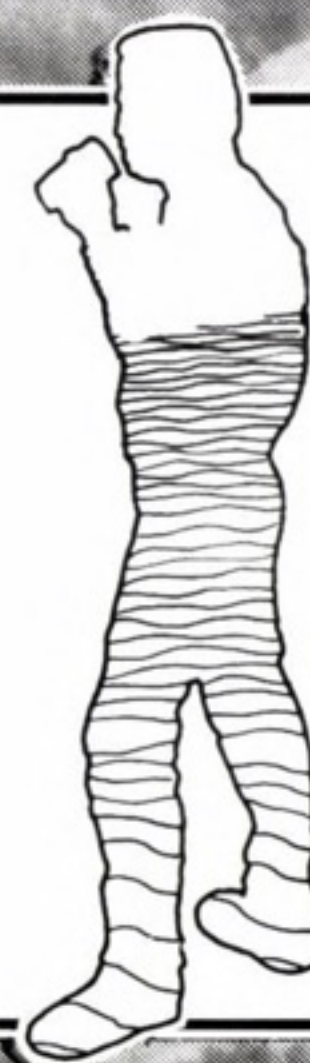


4. An ecological miracle

The chemists are equally amazed by water's capacity to absorb heat. According to its molecular size, water ought to boil at -93°C . This would rather cramp its use for cooking and heating. Water's storage of heat has extraordinary ecological consequences. The oceans act as vast solar-energy reservoirs: every 90 minutes the Gulf Stream releases to the air as much energy as humans worldwide produce in a year through burning coal. As water masses move towards the poles, the energy they liberate keeps the climate temperate, creating an environment in which life can flourish.

5. Water on the brain

Around 70 per cent of the human body is made up of water. Brain and muscle tissues are water-richest, bone and fat water-poorest. Water also performs the role of solvent and conductor essential to the metabolic performance of the human being. Every day our bodies turn over 2.5 litres of water, losing most of this by respiration, perspiration, and excretion, and replacing the shortfall by the combustion of food and drink. Without the body's natural cooling process – in which water is essential – this combustion would cause a rise in body temperature of 26°C.

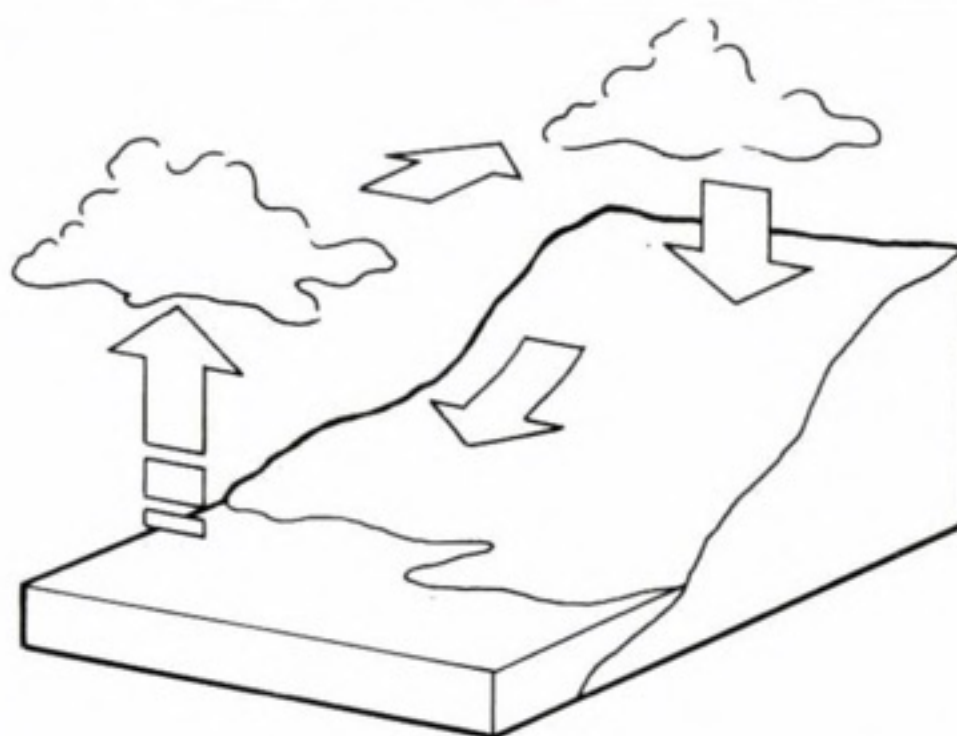


6. The global bucket

The vast majority of the water on earth – over 97 per cent – is contained in the oceans. With its high mineral content this is no use for sustaining earth-bound plant or animal life. Most of the freshwater is locked up in the icecaps and glaciers, leaving only 0.6 per cent in lakes, rivers, and under the ground as an accessible resource vital to human activity. Nevertheless there is plenty to go round: 3,000 cubic metres per person per year at present. But pressures from expanding population, irrigated agriculture and thirsty industrial processes are growing.

7. The hydrological cycle

Every schoolchild is taught the wonders of the rain-and-shine system whereby water is endlessly recycled through the atmosphere from sea to land, fuelling plant and animal fertility in the process. Each year the sun's energy draws 500,000 cubic kilometres of seawater into the air. Around one-fifth of this falls back on land as rain, setting off down rivers and streams towards the sea to repeat the cycle. The amount of water in the cycle is constant and cannot be changed.



8. The rain in Spain...

But this constant amount of water in the global bucket pours on some countries and continents much more than others – it favours those who live in the green and pleasant lands of the temperate zones. Many parts of Asia and Africa face grave water shortages. Paradoxically it is also these regions which are most prone to flooding as run-off turns dry seasonal rivers into raging torrents, causing immense damage. Because of population growth, global supplies per head of this finite resource are dropping, and the sharpest drops are in already water-short countries.

9. The matrix of life

We can live without oil if we have to; we cannot survive a day on earth without water. Its ready supply is too easily taken for granted, especially in temperate parts of the world. As pressure increases on our supply – pressure from people, industrial processes, pollutants – water is in grave danger of becoming just another commodity in the market place, and supplies are dominated by the rich and powerful. In the traditional world, in religion and even in municipal engineering, water has always been seen as a common resource, indivisible as air. Equity demands that it remains so.

Mrs Oyepeju's pump

When the village's new pump broke down, Mrs Oyepeju took matters into her own hands. A short story by Maggie Black.

MRS Grace Oyepeju, midwife, grandmother of 32 children, Mother of Orunda village, cooled her face with the breeze of her banana-leaf fan while she waited for her moment. Whenever visitors came, and they came often since the handpump, Mrs Oyepeju put on her heaviest cotton robes, tied a confection of fabric around her head, and assumed her position. These days the visitors always asked to hear the women's point of view. When the Village Chairman nodded she rose stiffly to her feet. Mr Matoke from Local Government in Awe, his brow creased in concentration, translated for her as usual. They stood side by side; they understood one another.

Although the dry season was well on its way and the sun beat down unkindly, eagerness shone from the visitors' important faces. Mrs Oyepeju was a figure only faintly suggested in the numbered paragraphs of their planning documents. Now here she was at the proverbial end of the long, hot, and dusty track, large as life and twice as magisterial.

The handpump, she began, had come from India. It was called 'Mark 2' because two people had left their mark upon it. One was the engineer, who had brought his drilling rig and planted the handpump in the ground. The other was the Chairman – here she bowed towards him – who had made it his business to

look after it. The women liked the handpump, they liked it greatly. It had brought happiness to Orunda village, and she, Mrs Oyepeju, thanked the visitors and asked if they could send another. Then she sat down.

Next day, Mrs Oyepeju received an unexpected caller: a tall woman in pure white canvas shoes who came with Mr Matoke in his new pick-up truck. She had visited yesterday, she said, and she had come back because she was unsatisfied. Mrs. Oyepeju offered her guest a soft drink and asked how she could help. The villagers of Orunda would be upset to know that she had not enjoyed their hospitality. No, no. That was not the problem, said the visitor, not at all.

First she talked of 'genda', but 'genda' was not a word Mr Matoke was able to translate. Then she talked of handpump, a word which needed no translation. Why was the handpump situated next to the Chairman's house? And why had his son gone for training, why not a woman like herself, Grace Oyepeju? Did she not think a woman could hold a spanner and grease a nut? The visitor's words poured onto the ground like a torrent. Mrs Oyepeju and Mr Matoke were non-plussed.

In her canvas shoes she had visited the stream. There had been women there with pots. Why? Did they not know that stream water gave children diarrhoea? Then the visitor's pink face became flushed. She had found out that the village Chairman charged the women for handpump water! What an outrage! Did they not know that handpump water must be free! The women of Orunda must make a stand against male exploitation and Mrs Oyepeju must lead it.

Mr Matoke mopped his brow and looked the other way. There was a silence. Then Mrs Oyepeju told her visitor that she, Mother of Orunda, would weigh these words very carefully.

Well, there was truth in it. The pump was on the Chairman's land. Naturally he and the engineer had settled such a matter. The son, trained in handpump maintenance, now called himself a mechanic. He had hammered a signboard onto the tree saying 'Adebayo's Repair Shop', and was even now mending the puncture in Mr Matoke's back tyre. And yes, the women did pay a levy for using the handpump. Was this wrong?

Over the next days, she discussed these things with the women of Orunda. They talked of power, they talked of the selfishness of men, and Mrs Oyepeju wore her juju bracelet constantly. Then they stopped paying money for the handpump water and waited to see what would happen.

For a time nothing did. Some men took the women's side, pleased to see the Chairman scratching his pockets, down on a leader who abused his position to enrich himself at the people's expense. Who was he to own the water? Next he would claim to own the sky! Then, just as the dry season began to bite, the handpump broke down.



Illustration: Clive Offley

Adebeyo refused to mend it. He said it was too strong a rupture. He laughed when Mrs Oyepeju borrowed his spanner. No, the engineer in Awe was not around. He was busy seeing to hand-pumps in villages where, Adebeyo said, chairmen were more 'co-operative'.

Mrs Oyepeju was angry. But the women of Orunda did not seem bothered. They plied back and forth from the stream. It had served their husbands' fathers and their fathers' fathers well, they said. What was so good, anyway, about water which came from a deep, dark hole in the ground where evil spirits might have tampered with it? When you thought about it, the whole idea had been a trick. The engineer had been in league with the Chairman, and both were in it with Mr Matoke, and he, well where had his new pick-up come from? - anyone could read the fancy symbol on the side.

Mrs Oyepeju shook her head. She looked at the children's dirty hands and fly-blown eyes, and she told the mothers of the babies she had midwived that they were ignorant and stupid.

A few days later the stream ran dry. Such an event had never occurred before, not even in the worst dry season. Now everyone in Orunda was suffering, every man, woman, and child. The women had to walk miles to a dirty pond shared with a group of cattle people from up north. Some were beaten up and their pots broken. Men threatened to fight. Children were sick. The word 'cholera' was whispered. The only solution was to mend the handpump. Very well, said the Chairman. He would go to Awe and speak to the authorities.

Some days later, the Chairman and three men in overalls drove into Orunda in Mr Matoke's pick-up. They brought with them a metal tripod, lifting tackle, rods, pipes, clamps, and in two hours they mended the pump and replaced the broken parts.

But before they touched the pump they held a meeting of all the village. It was proposed, and unanimously agreed, that every family would pay a levy to keep the pump clean and in repair. The Chairman would collect the money and spend it appropriately. When the water came flowing through the spout again, all Orunda, men, women and children, shouted their excitement.

Some weeks later, after the rains, the Orunda stream began to flow again. By then, explained Mrs Oyepeju to the visitor in canvas shoes who returned one day in Mr. Matoke's pick-up, 'genda' had borne fruit. It was the visitor's turn to be nonplussed. The pump on the Chairman's land? His collusion with the authorities? The male preserve? The mechanic? The levies? What had changed?

Mrs Oyepeju, Mother of Orunda, smiled benignly. I have changed, she told her guest. When I saw how stupid were my daughters and how dirty and sickly their children, I employed migrant workers, cattle people from the north,

and I had the stream diverted. It flowed away, and the village found it dry. When they all suffered, male and female, they made a decision together. It was a good decision. And now it cannot be undone by those who bring ideas from other places and do not understand our ways.

The visitor curled her canvas toes in evident discomfort. But Mr Matoke nodded wisely. Then he asked Mrs Oyepeju a question deep in their own tongue.

What did you do with the water from the stream? Ah, she said. I planted, and I harvested while everywhere else was dry. And what will you do with the profits? he asked in humble admiration. With your help, Mr Matoke, I shall purchase a handpump. I shall put this pump on my own land. And I and my daughters and the mothers of the children of Orunda, we shall run it for ourselves.

Pit stop

Designing latrines is the most unglamorous but most useful development work of all. An NI report from the back line.

FLUSHING our bodily wastes away with the tweak of a handle or pull of a chain is a luxury that three-quarters of the world's population can never aspire to. Laying on water, toilets, drains and sewers to every household would cost at least one thousand dollars a head - and most developing countries will never afford that. So the 'Sanitation' in 'Water and Sanitation for All' has to be the lower-cost, humbler pit latrine, a means of confining and neutralizing harmful ordure rather than flushing it away. During the Water Decade, latrines have received a considerable amount of attention.

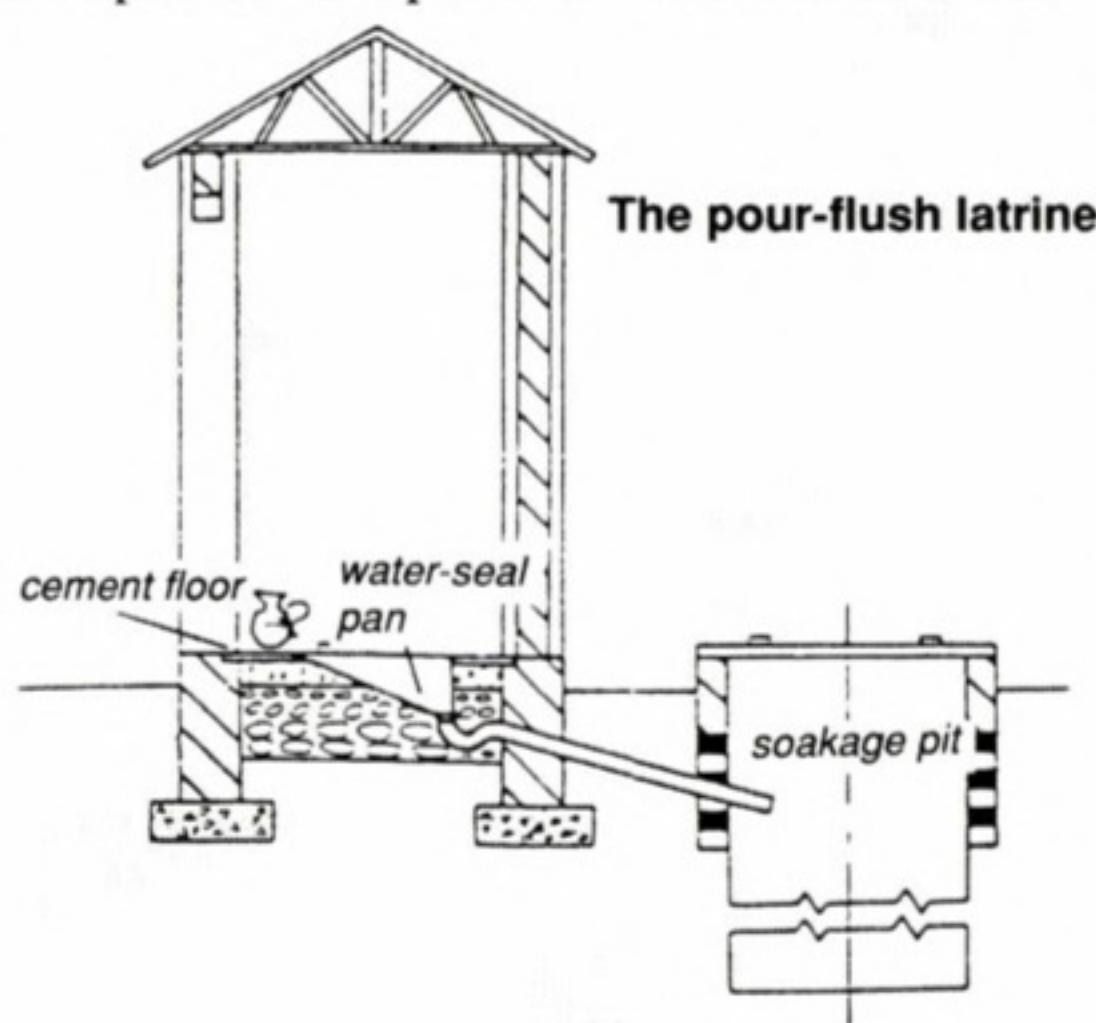
The problem with latrines is that almost no-one wants to use them. Any picnicker will sympathize: the olfactory advantage of the open air as a place of 'convenience' rec-

ommends itself against a small, dark, smelly and often fly-blown shit-house. But in many parts of the Third World where the tree and bush cover close to town or village has disappeared, privacy is becoming hard to find, something women find especially difficult. For health reasons too, latrines must find ways of recommending themselves: diarrhoeal disease is arguably more often transmitted on the legs of flies which alight first on human faeces and then on food, than by any other route.

The sanitary engineers, therefore, have given a lot of thought in the recent past to improving both the design and the reputation of the offending pit latrine. Pioneers include John Pickford and his team at the UK's Loughborough University; Peter Morgan at the Blair Institute in Harare, Zimbabwe; Iswarbhai Patel of the Environmental Sanitation Institute in Ahmedabad, India, and others in a rare breed of toilet missionaries, proselytizing their difficult, taboo-ridden cause.

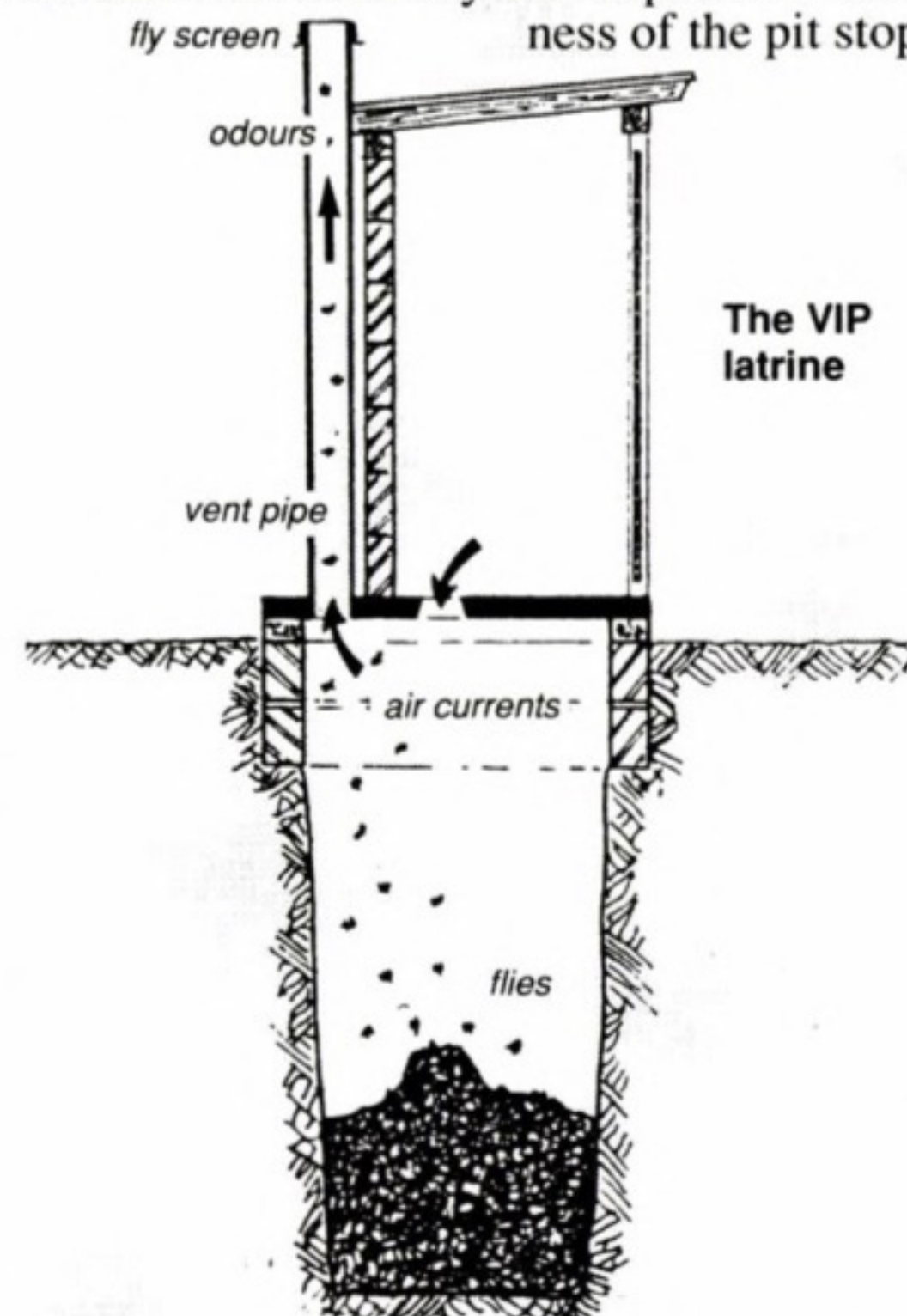
There are two basic types of pit latrine: the pour-flush, which has a toilet bowl with water in a U-bend like an ordinary WC but for squatting not sitting; and the dry variety, with your basic hole and not much else. The choice depends on the method of anal cleansing, and is therefore fixed geographically and culturally: water in Asia, dry in Africa. The pour-flush makes no sense in a water-short area where no-one can afford neat little squares of decomposable paper wipes.

Both types have been radically improved over the years. The pour-flush is now a well-established, even commercial, proposition. Most design effort now goes into trying to keep it cheap; it is the pit lining material which makes the construction of all latrines costly, and they can run up to \$200. The dry latrine has been vastly improved in its new incarnation as a VIP - ventilated improved pit - latrine. The addition of a ventpipe external to the hut, reaching into the pit, makes it odourless and flyless. Of all the pipes in the water and sanitation field, this is the one doing most to transform the messy and unpleasant business of the pit stop.



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A TERRIFYING rumour surfaced in the shantytowns outside Recife in north-east Brazil in 1987 and has been circulating there ever since. The whisperings concern the abduction and mutilation of young people who, it is said, are eyed greedily as fodder for an international trade in organs for wealthy transplant patients.

Shanty-town residents reported multiple sightings of large blue and yellow vans, usually driven by North American or Japanese agents, who were said to be scouring poor neighbourhoods in search of small stray children they mistakenly believed would never be missed. According to the residents' stories, children would be nabbed and shoved into the trunk of the van. Some were murdered and mutilated for their organs (especially eyes, lungs, hearts and livers), their discarded bodies found by the side of the road or tossed outside the walls of municipal cemeteries. Others were taken and sold directly to hospitals and major medical centres – and their eviscerated bodies were said to turn up in hospital rubbish tips.

'They are looking for "donor organs". You may think that this is just nonsense,' said my friend Little Irene. 'But we have seen things with our own eyes in the hospitals and public morgues, and we know better.'

'These are stories by the poor and illiterate,' offered another of my friends – Casorte, the new Socialist manager of the municipal cemetery of Bom Jesus. 'I have been working here for over a year. I arrive at six in the morning, and I leave at seven at night. Never have I seen anything. Where are the bodies or even the traces of blood left behind?'

The stories reached such proportions that my attempts one morning to rescue little Mercea – in the midst of a severe respiratory attack – backfired. As soon as I gave the order to the taxi-driver – 'To the hospital and quick!' – the already terrified little toddler began to choke, scream and go totally rigid. No amount of coaxing could convince her that her tormented little body was not going to be sold to the doctors by her American *madrinha*.

Even more children than usual were kept out of school during this period, and others were sent away to live with distant kin. Those who were left at home while their mothers were at work in the sugar-cane fields or in the houses of the wealthy, found themselves virtual prison-

ers, locked into small, dark huts with even the wooden shutters firmly fastened. On several occasions I had to comfort a sobbing child who, through a crack in a door or shutter, would beg me to liberate her from her dark and lonely cell.

haps, is the possibility that these seemingly farfetched rumours of body- and organ-snatching have their basis in poor people's perceptions, grounded in a social and medical reality, that their bodies and those of their children might be worth more dead than

BRAZIL

The theft of life

Fear of a grisly trade in organ transplants stalks the shanty towns, according to Nancy Scheper-Hughes.



Prey to the darkest fears: a poor family in north-east Brazil.

The root of these extravagant fears may lie in an actual and active round-up of little street urchins, called *meninos da rua* (street children), motivated by angry shopkeepers and supported by local police. Some of these children 'disappear' into Brazilian prisons and correctional institutions that are viewed with horror by shantytown children. Others are assassinated by local 'death squads'. Benedicto Rodrigues dos Santos, head of the Brazilian National Street Children's Movement, says that in the last five years his movement has recorded the violent deaths of 1,397 street children.

But more immediate, per-

alive to the rich and powerful. Above all, they fear dying in the charity wards of public hospitals where their remains will be 'donated' to medical students to cancel their accumulated medical debts.

Stories like this one, told by a washerwoman from Recife, confirm some of the suspicions.

'When I was working in Recife,' she began, 'I became the lover of a man who had a huge, ugly ulcer on his leg. I felt sorry for him and so I would go to his house and wash his clothes for him, and he would visit my house from time to time. We were going along like this as lovers for several years when all

of a sudden and without warning, he died. The city sent for his body. I decided to follow him to make sure that his body wouldn't be lost. He didn't have a single document, so I was going to serve as his witness and as his identification papers. But by the time I got to the public morgue they had already sent his body to the medical school for the students to practise on. So I followed him there and what I saw happening at the school I could not allow. They had his body hung up and they were already cutting off little pieces of him. I demanded the body back. After a lot of arguing they let me take the body home with me. He was only a beggar, a *tirador de esmolas* who sometimes did magic tricks on the bridge in Recife to amuse people. But I was the one who washed his clothes and took care of his wound, and so you could say that I was the owner of his body.'

Due to stories and incidents such as these there is a fascination and horror associated with autopsy, plastic surgery and organ transplants. 'So many of the rich are having plastic surgery and organ transplants,' offered one older woman, 'that we really don't know whose body we are talking to anymore.' As they see it the ring of organ exchange proceeds from the bodies of the young, the poor and the beautiful to the bodies of the old, the rich and the ugly, and from Brazilians in the South to North Americans, Germans and Japanese in the North.

Shantytown residents can easily imagine that their bodies might be eyed longingly as a reservoir of spare parts by those with money. We in the rich world are far more comfortable – we think of organ transplants as 'gifts' donated freely by loving and altruistic people. But to the poor living on the edges of affluent society, whose bodies are routinely preyed upon by the wealthy and powerful (in economic and symbolic exchanges that have international dimensions), the organ transplant implies less 'the gift' than 'the commodity'. In place of the 'gift of life' there is a suspicion of a 'theft of life' in which they must serve as the unwilling and unknowing sacrificial lambs.

Nancy Scheper-Hughes is a US anthropologist who has remained in regular contact with the people of the shantytowns near Recife since the mid-1960s.

EASTERN EUROPE

Unison

Churches work together

It is not just the role of the Communist Party that has been thrown into the melting pot of Eastern Europe. The Church, which for decades suffered persecution or looked for an accommodation with Eastern European states, has found its role changed dramatically too.

East Germans protesting in Dresden and Leipzig relied on the Lutheran church. Thousands of demonstrators took to the streets after each Monday's prayer-meeting for justice in Leipzig. As one East German official said to me: 'How can we stop this? The whole (Lutheran) church is based on the principle of protest.'

A peculiar feature of events in Eastern Europe is, however, the strength of the non-denominational Christian presence. In East Germany, Poland, Romania and Czechoslovakia everyone, from Pentecostals and evangelists to orthodox Christians has been combining in sometimes awesome displays of unity.

In Romania it was the people's support for an exiled Lutheran priest that triggered off the revolution and brought down Ceausescu. A stern warning was thereby handed out to church leaders who had previously sided with tyranny.

In Prague, Christian spokesperson Vaclav Maly, the Civic Forum's 'Speaker' for its first ten days, supported the same principles. He stressed that it was essential to admit the moral and spiritual dimensions in any country's Charter. Christians of all persuasions had been imprisoned for their outspokenness against injustice.

The day before the Berlin Wall was opened the West German Protestant Synod passed a resolution encouraging the West German government not to interfere in the affairs of East Germany. The resolution was drafted by a Social Democrat. In East Germany, the Church suffered severely for its opposition to the government. Many church members were arrested and subjected to long-term intimidation. But as with other opposition groups in Eastern Europe, the tide of revolt was not to be stemmed.

George Fisher

POPULATION

Men too

Sterilization in India

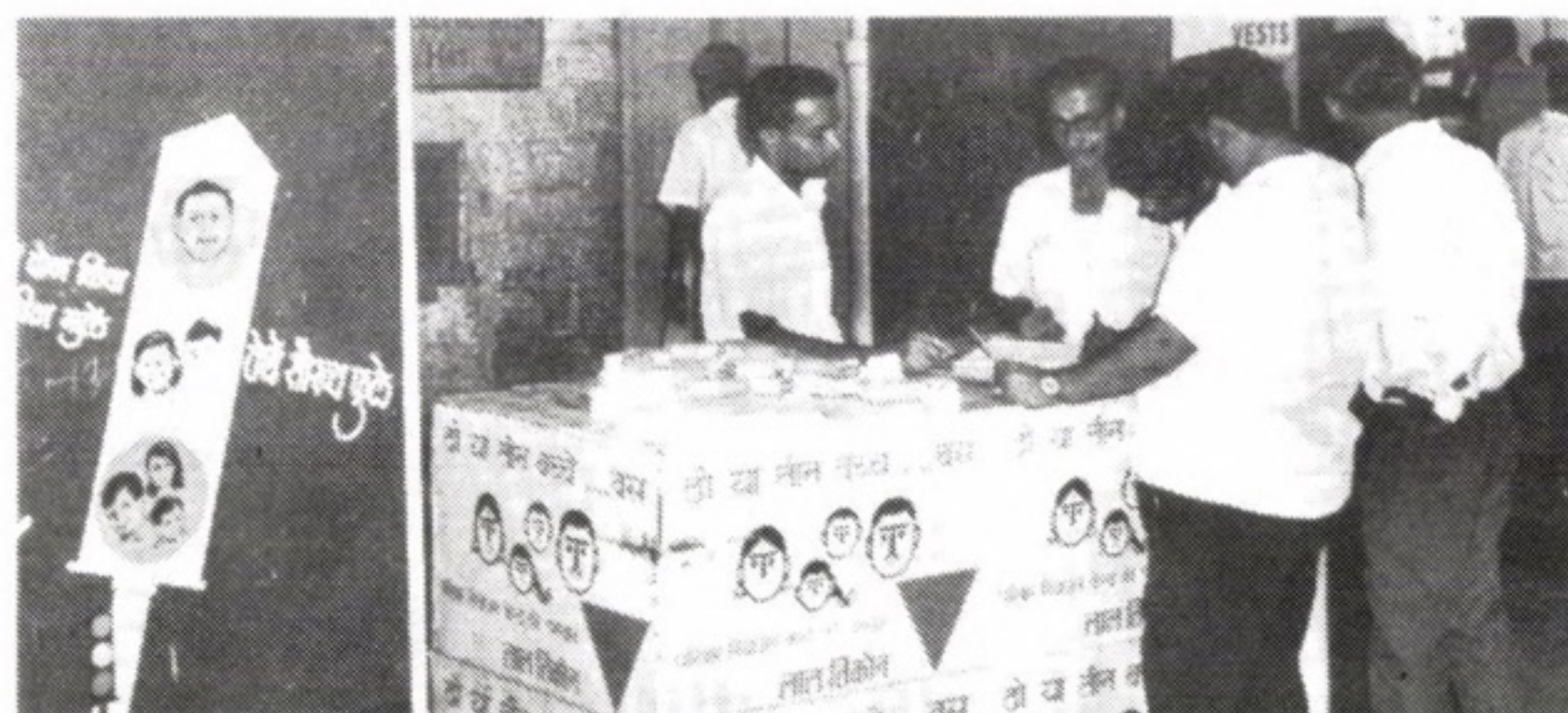
It was a time of severe drought when Kela and Shipu, two mothers in their late twenties, heard the news. Anyone who agreed to be sterilized in Rajasthan, western India, would be eligible for a state grant towards building a well.

Happy to see a way to end the annual drudgery of childbirth – and the recurrent anxiety over empty grain-pots – the women went to the sterilization centre. Their husbands were away in the city but Kela and Shipu felt sure their menfolk would approve – once they saw the money.

But the state government never paid up and the angry husbands beat up their wives before throwing them out – declaring them 'barren and sterile'.

Since 1977 over 80 per cent of sterilizations have been on women although the operation for men (vasectomy) is cheaper, safer and at least 20 times more reliable than that for women (laparoscopic sterilization). In 1989 at the Najafgarh health centre on the outskirts of Delhi, for example, 486 women were sterilized compared with just 24 men.

Guarai, a family planning



Stumbling block: 80 per cent of free condoms still go unused.

worker for 30 years, says people in rural areas are besieged by fears. They are afraid that vasectomy will make men sexually impotent or, at least, physically weak. And in a country where men are still considered superior there is a tendency for women to deify their menfolk and protect them from the surgeon's scalpel.

For example, Shanti is a thin and anaemic mother of three. But she does not favour vasectomy for her husband because 'he has a long distance to cycle to work'. Rani has five children, but prefers to have the operation herself because her truck-driver husband, 'has a tough job'. Women may also fear that if their husbands get sterilized they will be more promiscuous.

Although sterilization remains the surest means, other methods are being promoted. The Government has been dis-

tributing free condoms, for example. But condoms are still not popular. Only 20 per cent of the 600 million distributed in 1988-89 were actually used.

Attitudes towards family planning have changed in some respects at least. Family-planning workers used to be stoned and driven out of villages. Today long queues of women can be seen outside family-planning centres – but the men are still staying away.

This has implications worldwide. Unless men can be encouraged to develop a more responsible attitude towards family planning – from the corridors of power to the village grassroots – population growth is bound to put an ever greater strain on global resources.

Usha Rai

ANIMALS

Ugly dusters

No hiding place for ostrich

THE ostrich is a huge and beautiful creature – the largest bird on earth. It cannot fly, but it can certainly run. Experts have clocked speeds of up to 70 kilometres per hour, making it second only to the cheetah for pace. And it grows fast, too, reaching eight feet in height and 300 pounds in weight in an incredible ten months. This



A star is born: flightless chicks.

makes the unfortunate bird extremely profitable to rear.

There is virtually no wastage. The feathers are in high demand for dusters or dress trimmings. The skin from a single bird can fetch almost \$100 and can be used for handbags, purses, gloves and shoes. Its lean meat is prized by weight-watchers. The rest can be turned into pet food and bonemeal. Infertile eggs can be crafted into ornamental gifts.

Ostrich farming is now growing as fast as the ostrich itself in Zimbabwe. The Ostrich Producers Association of Zimbabwe (TOPAZ) says: 'One does not need a degree to calculate that ostrich farming offers high returns.' Five years ago the Association had six members. Today it has 56. Its president, Kevin Grant, says farming is also saving the bird from extinction.

Fewer than 2,000 ostrich now live in the wild in Zimbabwe, compared with about 10,000 in captivity. In drought areas like Matabeleland and the lowveld of southern Zimbabwe many commercial farmers are moving away from cattle ranching. Ostrich

farming offers an alternative.

Now multinational corporations like the London-based Lonrho are cashing in on the demand for breeding stock. The pioneers relied on gathering eggs from the wild but today most farmers are breeding their own. One female ostrich normally lays 12 to 15 eggs during the May to December mating season. New methods have induced them to produce as many as 45. Cattle take three years to be ready for slaughter while ostriches take just 14 months. The aim is to slaughter up to 20,000 birds from next year, which would bring in about eight million dollars in foreign currency.

Japan, the US, West Germany and Switzerland are all interested in ostrich meat, which competes with venison. TOPAZ is carrying out a feasibility study to set up an ostrich abattoir in Harare. The female ostrich can breed for as long as 40 years, but the life expectancy of most of its offspring could be severely curtailed.

Charles Rukuni/Gemini

ANIMALS

Oxfam and furs

Oxfam UK's second-hand clothes shops have decided they will no longer accept fur coats. No new furs are being accepted and the last stock was sold off before 1 March, 1990. As the Director of the 830-odd shops put it: 'Over several years Oxfam has become more and more concerned at the environmental implications of the fur trade and the threat we believe it poses to certain animal species... we've decided to phase out as quickly as possible all handling of fur items.' What to do with the donated but unsold coats? Sending them to Romania is one possible solution.

From Oxfam press release, 5 February 1990

MENTAL HEALTH

Good news

Admissions for all classes of psychiatric illness have fallen by 17 per cent in England and Wales between 1952 and 1986. Over that same period, hospital admissions for schizophrenia are down by more than 50 per cent.

Findings published in *The Lancet*, after reviewing admission statistics over the 34-year period, say the drop in cases appears to be real, not the result of changing hospital admission policies or moves towards care in the community. Nor is it a case of doctors diagnosing patients as having a condition once called schizophrenia but now given other labels such as mania – as there have been no corresponding increase in these other cases.

From *The Lancet*, March 1990

CAMBODIA

Phone friendship

A retired British diplomat has got round the complex rules restricting export of technology to communist states by using a Norwegian satellite dish to provide Cambodia with its first international direct-dialling communications link.

The Hun Sen government was contacted a year ago by John Pedlar, a director of the

Cambodia Trust and a British embassy official in Phnom Penh in the 1950s. His proposal was for a communications system to help the politically isolated regime promote dialogue with the West. The \$38,000 worth of equipment needed was funded by the Cambodia Trust. The system provides direct-dial telephone, telex and fax transmission, enabling the country to access the International Maritime Satellite system.

From *Far Eastern Economic Review*, Vol 147, No 7, 1990

SOUTH AFRICA

Go, Shell

The city of Vancouver will no longer buy Shell products. This was decided at a City Council meeting in September 1989. Vancouver is the first Canadian town to boycott Shell because of its involvement in South Africa. In the US 30 towns have already endorsed the boycott.

Access to the city museum of Delft, Holland, has been denied to Shell by the city council. They wanted to hire the beautiful sixteenth-century building for a farewell party for the director of Shell Nederland, Mr H Hooykaas. Delft's mayor said the decision was only logical given the council's policy of not accepting money from companies with investments in South Africa.

From *Newsletter on the Oil Embargo against South Africa*, No.18, first quarter 1990

OVERSEAS AID

Canada leads

Canada will soon become one of the first Western countries to resume aid to all three of Indochina's war-ravaged countries: Vietnam, Laos and Cambodia. In bringing an end to Canada's support for the aid embargo imposed by most non-communist countries following Vietnam's 1978 invasion of Cambodia, External Affairs Minister Joe Clark said Cambodia's needs were real and could not wait for a political solution to the civil war.

From *Far Eastern Economic Review*, Vol 147, No 6, 1990

ARMS TRADE

Guns for PNG

Papua New Guinea (PNG) is to be given an additional \$11.5 million by Australia, including increased military aid and arms supplies. Concern is simultaneously growing at the security forces' beating and killing of innocent people in Bougainville, where a separatist movement has closed the giant copper mine. Canberra has denied any connection between the increased aid and the human-rights-abuse allegations.

In January a Briton became the first foreign national to die as a result of the troubles when he was killed by rebel forces. 70 people have died violent deaths there over the last year.

From *Far Eastern Economic Review*, Vol 147, No 6, 1990

ENVIRONMENT

Breathing filth

More than one billion people are now breathing air so polluted that it breaches international safety limits, according to the Washington-based Worldwatch Institute. The Institute's new report assembles statistics from around the world based on breaches of the World Health Organization's air-quality standards.

On heavily polluted days in Greater Athens, for example, the death rate rises sixfold, while the air in Bombay is so polluted that a day's breathing is equivalent to smoking ten cigarettes.

Britain's sulphur dioxide (SO₂) problem is described as the worst in Europe with 1.89 million tonnes being produced each year. The sulphur dioxide is a prime cause of acid rain which has damaged some 64 per cent of British forests. The report criticizes European Community agreements to cut SO₂ emissions from power plants by 57 per cent by 2003, and reduce nitrogen oxides by 30 per cent by 1998 as 'too little, too late'. Instead the report would like to see 90-per-cent cuts in the two acid-rain gases.

From a Worldwatch Institute report noted in *New Scientist*, 27 January, 1990

HEALTH

Profiting from pollution

The usual selling point of skin-care products is the protection they provide against sun, wind and weather. Now those cosmetic companies alert to new trends are hoping to sell a new kind of protection... against pollution. Chanel touts the ability of its *Prevention Serum* to counteract 'environmental impurities'. Estee Lauder's *Skin Defender* lotion promises to shield against the 'onslaught of irritants from pollution'. The treatments typically contain sunscreen plus ingredients designed to neutralize so-called free radicals, the highly reactive molecules found in some air pollutants.

From *Consumers Union News Digest*, US, 15 December 1989

TOXIC WASTE

Mercurial play

Some 100 kilogrammes of poisonous mercury dumped at an industrial estate near Baroda, India, started a rush from surrounding villages and slums. People were collecting the mercury in their lunch boxes, cooking pots and any other containers that could be found. Entire families, from grandparents to small children spent days scraping mercury from the semi-solid muck of the dump. They ate their food on the site, their babies played on the site. The reason for the rush was the money paid for the mercury – \$9 - \$12 a kilo.

The Gujarat Alkalis and Chemicals Ltd, a state-owned company producing caustic soda, has been blamed for the dumping. According to newspapers, they had dumped 20 truckloads of the liquid waste containing the mercury at the site.

From *Panos Features*, Nov 17 1989

"endquote"

'Was not necessity the plea of every illegal exertion of power or exercise of oppression? Necessity is the plea for every infringement of human freedom. It is the argument of tyrants; it is the creed of slaves.'

William Pitt the Younger.

Tea, charity, pain and performance.

How can you get people to care about disability in a country like India – where so many of the able-bodied are empty-bellied? Dinyar Godrej has been trying.

IN Colaba, South Bombay's smart, tourist-infested strip, I once saw a foreigner kneeling down in the street to attend to a legless, bleeding man who was rolling across the pavement, turning pain into performance. As the foreigner extracted gauze and cotton wool from his bag the beggar screamed in protest. But the stranger's determination to help was not to be challenged: he proceeded to wrestle with the legless man, forcibly dressing his sores in pristine white. The crowd of shoppers, normally indifferent, watched this display of charity with fascination. The beggar, meanwhile, could not believe his misfortune: who would part with small change now that he had been sanitized?

This incident typifies the situation of people with permanent handicapping conditions in India. Deprived of any social – and often economic – status, their only option is to flaunt their disability. Medical intervention may sometimes appear to make their plight more bearable, but is rarely followed by efforts to help them adjust to a society which does not care about their needs and actually obstructs them from competing in the financial arena.

The prevalent attitude in India is that disability is a non-issue as long as large numbers of the able-bodied cannot afford decent meals. It is easy to forget that disability is more prevalent among the poor and that the disabled face the same rat-race as anyone else – but with more numerous needs and greater disadvantages. In effect, government indifference is tantamount to discrimination.

The media sporadically erupts in praise of picnics for post-polio children or book donations for the blind. The honourable minister beams beatifically as he hands over the cheque. Society ladies turn up at offices of voluntary organizations hoping to minister bananas and biscuits. At the reception of a 'philanthropic club' speeches of self-congratulation have us cringing in our seats for hours.

Understandably, 'charity' is a dirty word amongst disabled people

and those who are working with them. The Government always stresses *custodial care* rather than *specialized training*. The teachers and therapists at the Centre for Special Education of the Spastics Society of India, where I worked, are tired of hearing about their 'noble' and 'virtuous' profession. They are underpaid professionals who persist in caring – not rich do-gooders, pursuing a 'hobby'. The children they help train and educate have also too often heard the words 'courage', 'struggle', 'abnormal'.

My job was as a publicity person, producing brochures that countered, for example, the popular Indian view of disability as a punishment for the sins of a past life. Fund-raising in an environment that did not give a damn about disability was an exhausting and, at times, crude process. Often campaigns had to be sentimental before they could begin to jolt an indifferent public. Or they had to be spectacular: we organized Bombay's largest fun-fair. Articles in the media, if not completely misguided, blended patronage and pity. We had to write our own articles to provide a clearer picture.

The Government reacted with token gestures and vague recommendations, being content to lean on the work the voluntary organizations were doing. Forced to chase a limited number of benefactors and modest funds, such organizations were often critical of each other's efforts, viewing their own work in isolation. More conservative organizations would criticize the progressive ones for being too concerned with new ideas. The progressive ones would counter that conservative organizations spread their efforts too widely to be effective. Yet all across the country they persisted in their efforts, propagating their causes with the stridency of pioneers, knowing that things have to change, however slowly. But for disabled people, the frustrations persist.

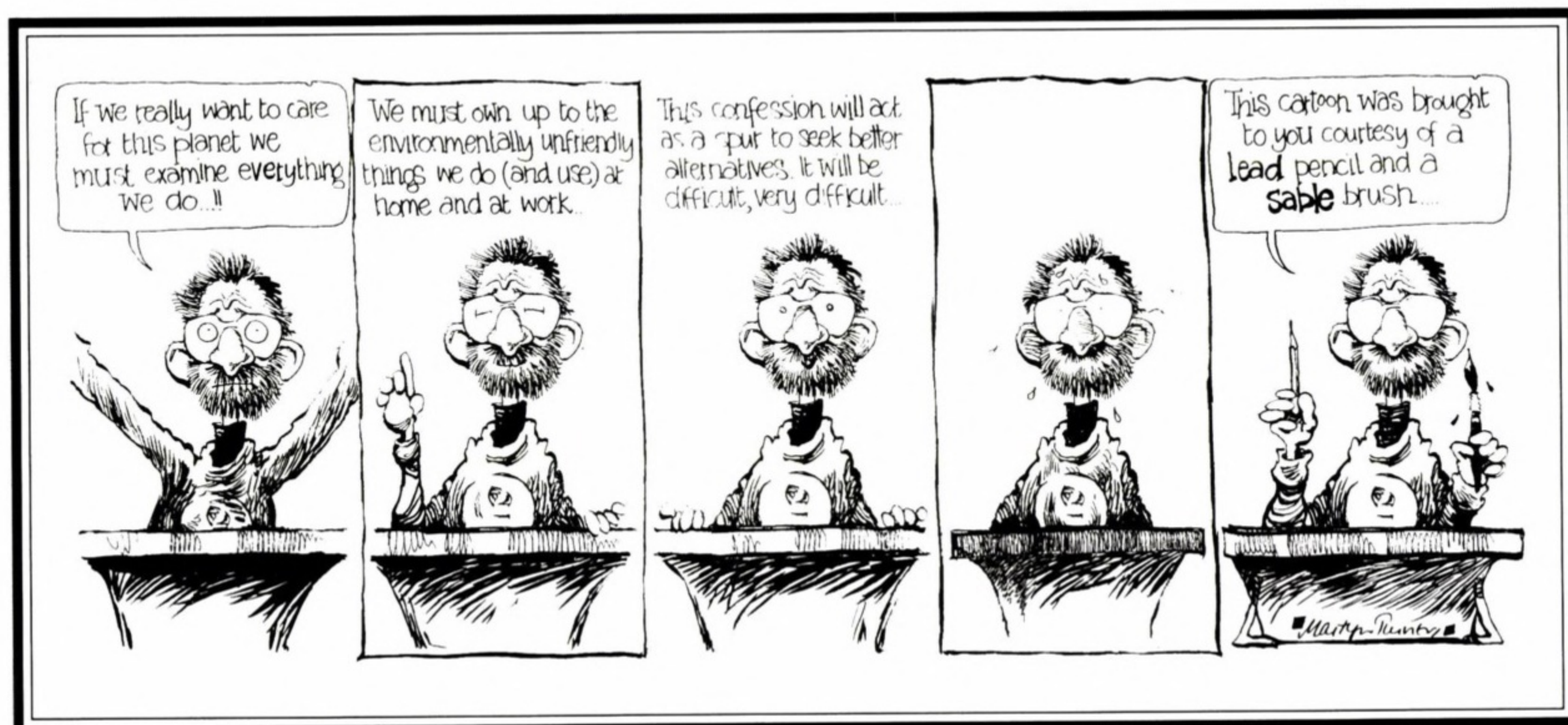
At the Spastics Society Centre no-one was encouraged to dwell upon their misfortune. But I remember the blind students who were at college with me being perpetually disappointed by their sighted colleagues – and being very vocal about it. They had reason – people went quiet on them in lifts; despite frequent requests, few offers to read books aloud came from those who could see.

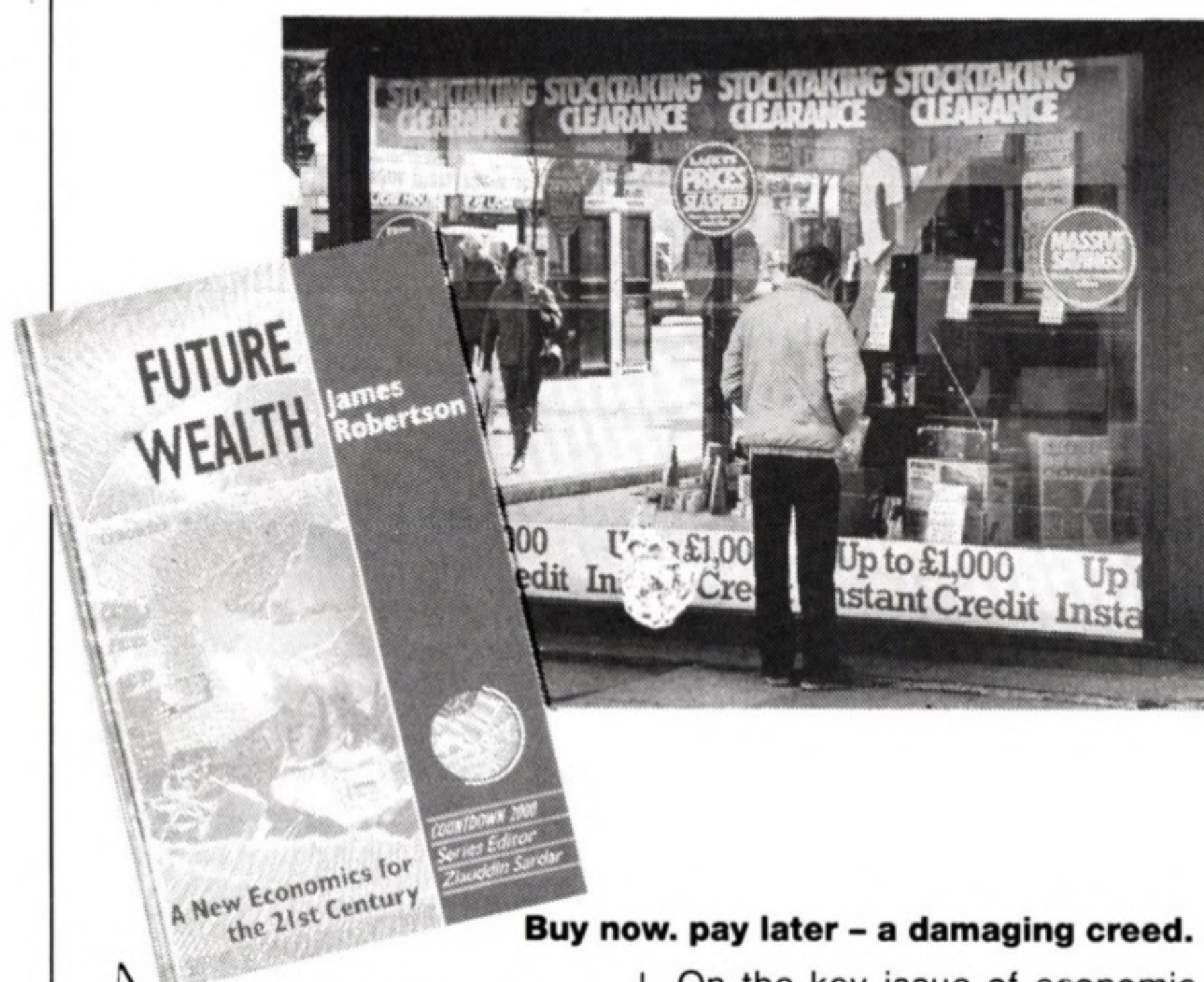
Or could we see? Isn't there a special kind of blindness that is a common reaction to disability worldwide: an inability to see the disabled as an integral part of society? For example, in England recently, a Saturday tin-rattler blithely informed me that the money was for a 'mental home' where 'they keep them right from the moment they are diagnosed until the moment they die...'

Dinyar Godrej, who lives in Bombay, is currently studying in the UK.

I think.

by Martyn Turner





★ BOOKS

Future Wealth

by James Robertson
(Cassell)

The first symptoms of millennium fever are already upon us. No-one doubts the potential for catastrophe. But it's going to be a tricky task to sift out real threats and genuine possibilities from the hallucinations that come with the fever.

Convinced Greens have something of a head start in the futurology business. Theirs is the priceless, almost unique advantage of having been proved right already. The difficulty with being taken seriously, however, is that you have to start sounding sensible. **Future Wealth** is a welcome and sometimes stimulating contribution to the debate. Economics, and the 'standard of living' over which it rules as a largely phoney science, are still the 'bottom line' of political reality. Here is a book that starts at the bottom line and tries to work upwards, reinterpreting the economic balance sheet in unfamiliar, humanistic terms.

The approach is largely that of the World Commission on Environment and Development (known as the Brundtland Report, after the former Norwegian premier who chaired it), so it is no radical departure. Robertson – and the New Economics Movement with which he associates himself – replaces a good deal of the dead economic jargon with words like 'purposeful', 'enabling' and 'conserving'. In the process he raises important questions about the purpose of economic development. He travels 'beyond' materialism, production and consumption.

But where does he arrive?

Buy now. pay later – a damaging creed.

On the key issue of economic growth he parts company with Brundtland – he is against it. He is also not happy with international trade. Self-sufficiency is what matters to him. We must begin to lose our interest in anything else. The flavour is decidedly pastoral.

This is where the trouble begins. More people live in the cities than the countryside. World trade is busily making us all more, not less, interdependent. You can be against this. But it's not so easy to seem relevant and credible if you've set yourself firmly against the world as it is actually experienced by most people.

The result is a book that rests heavily on moral assertion rather than detailed analysis, travelling more in belief than expectation. If you were to subject it to a modern 'textual analysis', you'd come up with a very high percentage of 'shoulds', 'oughts' and 'musts' – and without them the thing would begin to come unstuck. It is a remarkable, but not always helpful achievement in a book about economics to find just one reference to market forces, and that in relation to the Soviet Union.

This may meet with nodding heads in a converted audience or even on the international conference circuit. But for the rest of us, **Future Wealth** should be read, and doubtless will be used, more as a contribution to continuing debate than as the manifesto it sometimes aspires to be.

Politics ☆☆☆
Entertainment ☆☆

Through Brown Eyes

by Prafulla Mohanti (Penguin)

'Are you black?'
'No, I'm brown.'
'Light or dark?'

'Is the colour of my skin important?'
'I'm sorry, the room is gone.'

So began Prafulla Mohanti's search for lodgings in Leeds in the early 1960s. The experience was, and still is, a commonplace for all black and ethnic communities living in Britain. But there is something peculiarly shocking about this particular account.

Prafulla Mohanti is a good man – the sort of writer you want to meet. Apart from his writing, he is also a professional architect and town planner, painter, choreographer and polymath – a gifted man with what would once have been called 'enlarged views'. He lives in England but has never lost touch with the village in India where he grew up. Almost completely without affectation, he seems equally at home helping local kids with their paintings in the East End of London or treading the thick-pile carpets of



Mohanti

international hob-nobbery.

So when he is slung out of a cab, or spat at, or savagely beaten up, or has a letter he is writing stolen from him in a park in central London, the disgrace and shame that attaches itself to the 'culture' that spawns such acts seems all the greater.

'When I first arrived', he says, 'London was a safe place

to live in. Gradually violence has become a natural part of life.' His grief for a society he once respected is poignantly expressed in simple language that becomes a searing indictment.

But if this is the shocking part of the book, it is not what the book is really about. Mohanti has pointed things to say about everything and everyone he sees, from the need to meditate before being able to get to sleep on the soggy beds of Surbiton, to the cautionary tale of Kaliyuy, the Age of Destruction, with which he finishes. At once sad and enchanting, **Through Brown Eyes** can be read for pleasure, too.

Politics ☆☆☆
Entertainment ☆☆☆☆

★ FILM

Romero

directed by John Duigan

If ever there was a life story that cried out to be translated into the most popular of languages, that of celluloid, it is that of Oscar Romero, El Salvador's Catholic primate until his assassination in 1980. Most of us know little more about him than that he stood up for human rights and the poor, and that he died for it.

In fact, the movie reveals, he was a quiet, bookish man, unwilling to believe that his country's government was so brutal, its military so callous or its peasants so exploited. So his gradual awakening to the grim reality of El Salvador in the late 1970s, his development from meek mouse into liberating lion, is the very stuff of drama.

Or should have been. The pity is that this film is really not very good. It has the odd ring-

El Salvador's diffident dissident: Raul Julia as Oscar Romero.



ing line; its politics, like its heart, are unquestionably in the right place; and it has a fine central performance from Raul Julia (from *Kiss of the Spider-woman*). But it is unconvincing from the very outset. There is the decision that all dialogue should take place in English with a thick Spanish accent. There is the casting of a blond US actor as the firebrand Father Grande, the soul of liberation theology.

But most of all there is the hammy handling of key moments. Take the scene where a father comes looking for his ten-year-old son, only to find that he has been murdered by a death squad. It ought to have been the most moving of moments; instead it is clumsy and artificial, the fault both of John Sacret Young's screenplay and John Duigan's direction.

Say what you like about Oliver Stone, but as a depiction of the Central American nightmare his *Salvador* leaves Romero limping.

Politics ☆☆☆☆
Entertainment ☆☆

MUSIC

Waking Hours

by del Amitri (A&M)

Much heralded some years ago, del Amitri have finally resurfaced with a global hit (the acoustic troubadour protest of *Nothing Ever Happens*), this LP – and irrefutable evidence that you can't expect great pop from a deferential reshuffling of pop's past forms, or from an endorsement of consensual values under the guise of a social conscience.

Waking Hours is laundered 'dirty realism'. It's full of the voices of small-town losers and casualties. But don't expect the festering no-exit complaints of King of the Slums or the sublime despond of Band of Holy Joy. Always 'classy', del Amitri's pop is self-consciously respectful towards authentic blues guitar, good soul influences and traditional musics like cajun. It is music for the discerning, not



del Amitri: dirty realism but always classy

the despondent.

And del Amitri think they can transcend the dead zones of life. Which brings us to *Nothing Ever Happens*. True, it's a protest against the poverty of everyday life. So were the most challenging pop moments, such as early rock, punk and psychedelia. But those moments tested the social fabric we live in to destruction or

challenged it with unreasonable utopian demands. Whereas del Amitri are more like Phil Collins: they don't reinvent the world, just join in the chorus of voices lamenting modern, alienated values and hoping to improve us.

Worse, it's fuelled, as such complaints often are, by a very mid-1960s contempt for conformity – very *Semi-Detached Suburban Mr James*. They won't see that we all contribute to, resist or simply negotiate the 'real world' we live in. Instead we are 'like doped mice in the college lab' and del Amitri will awaken us with their decorous folk-roots.

Sorry, but del Amitri's common sense is the real opiate.

Politics ☆☆
Entertainment ☆☆

★ STAR RATING

Excellent	☆☆☆☆
Very good	☆☆☆
Good	☆☆
Fair	☆
Poor	

Reviews Editor: Chris Brazier

CLASSIC

Jude the Obscure

... being the book that outraged conventional pieties

THE publication of Thomas Hardy's *Jude the Obscure* in 1895 caused something of a scandal. One of the novel's two main themes, that of misery in marriage, was widely regarded as blasphemous. The Bishop of Wakefield told readers of the *Yorkshire Post* that he had burned his copy, and he then successfully persuaded Smith's Circulating Library to withdraw it. Hardy later wrote that the novel's message was simply 'that marriage should be dissolvable as soon as it becomes a cruelty to either of the parties – being then essentially and morally no marriage', but this did not prevent *Blackwood's Magazine* depicting him as a devilish apostle of free love. The *New York Bookman* called it 'simply one of the most objectionable books that we have ever read in any language whatsoever', and such universal condemnation, Hardy was later to claim, cured him of any further interest in novel-writing: he wrote no more fiction between 1895 and his death in 1928.

The novel tells of the fortunes of Jude Fawley, a poor orphan in a rural district near Christminster (ie Oxford) who entertains the unrealistic desire to be a student there. His zealous private studies are interrupted when he is tricked into marriage by a local girl, Arabella Donn. The marriage fails and the pair separate, Jude deciding to ply his trade as a stonemason in Christminster, hoping that his early ambitions will be nurtured by residence there. But his abiding experience of University is one of exclusion from it: the nearest he gets to the academy is toiling to maintain the stonework of college buildings. After a few alcoholic binges to relieve his frustration, Jude gradually becomes inured to his lowly social position. He then falls in love with his cousin, Sue Bridehead (an early feminist), but finds that his devotion to her is continually compromised by her surviving moral inhibitions. His hopes and passions thwarted, Jude slips into a rapid decline and dies an early death.

A summary does little to explain the major offensive which this novel launched against the conventional pieties of Victorian England. The attributes of all the major characters (Jude's educational aspirations, Arabella's determination to fulfil her sexual appetite, Sue's frequent scorning of moral orthodoxy) all threaten a status quo in which ordinary working people are discouraged from questioning their station

in life. It is the fact of these characters' struggle, rather than their ultimate defeat, which is important, because it represents a major historical process getting under way. By the time of Hardy's death, certainly, most of the dominant social mores depicted in *Jude* had been shattered.

It is argued that the book is of only historical interest. Indeed, it is difficult to imagine many readers getting worked up now about its treatment of marriage. But its second main theme, that of access to education, remains as politically germane as it was in 1895. *Jude the Obscure* is one of those books in which I find my own social experiences deeply entangled with those of the author and major character (Hardy, like Jude, was a self-taught boy from the provinces). Successive experiences as school pupil, student and teacher have confirmed my view that the book describes today's education system as well as that of 1895. It wouldn't even be inaccurate to say that I, and some others like me, are Jude Fawley, a century on. Coming from a council-house family and attending a run-down state comprehensive school, my chances of ever attending Oxford University were slim (although only seven per cent of children in Britain attend private school, over half of Oxford's undergraduate intake is still from this sector). The fact that I did so is often held against me in argument as proof that there is genuine equality of opportunity in British education. Of course, nothing could be more facile. The general picture, as opposed to peculiar isolated cases, tells a familiar story of the advantages of social privilege.

In purely educational terms, there are much better places to obtain a degree than Oxford, but the truth remains that it and Cambridge exercise inordinate influence on British political life, as stamping grounds for the rich and powerful. This is why they retain as much of an air of exclusivity as they viably can, and a vigorous contempt for the people whose productive labour pays for all their intellectual endeavour. This state of affairs is continually registered by outsiders. A recent editorial in the *NI* itself, ironically published in Oxford, complained of the 'closed to visitors' signs displayed by many of the University colleges.

Hardy's achievement in *Jude the Obscure* was to give voice to the frustrations which such an elitist institution engenders in people who have an interest in democracy and equality; it reveals more sharply than any other novel that scientific and cultural pursuits cannot be sustained without an enormous amount of (usually undervalued) physical work; and it gives the lie to Oxford's claim to be a repository of civilized values by depicting it as an agent of educational rejection.

No wonder this caused an uproar in 1895. It still applies, with a few qualifications, in 1990.

Macdonald Daly

Jude the Obscure by Thomas Hardy

Trinidad and Tobago



Photo: Alastair Matheson/UNICEF

Leader Prime Minister A N R Robinson
Economy GNP per capita \$4,210 (US \$18,530)
 Monetary unit: Trinidad and Tobago dollar
 Trade dependent on oil exports; other exports are fertilizers, sugar and chemicals. Main imports are consumer products, food and capital goods. Agriculture is overshadowed by oil industry, employs less than 10 per cent of workforce. Cash-crop production of sugar, coffee, cocoa and fruits has slumped, and 60 per cent of food requirements are imported. Other activities are fishing, hardwoods, rum distilling, paper processing, textiles and vehicle assembly.
People 1.2 million
Health Infant mortality 20 per 1,000 live births (US 10 per 1,000)
Culture Independent from Britain in 1962, Trinidad has descendants of African slaves (Creoles) and Chinese and Indian indentured labourers as well as offspring of French settlers expelled from Haiti in 1798; Lebanese, Syrians and Jews. Tobago is mostly Creole. Religion: Many religions, including Hinduism and Islam, reflecting the mix of groups. Languages: English and Creole.

Sources: State of the World's Children 1990; Encyclopaedia of Developing Nations

Last profiled in December 1980



LYING just seven miles off the coast of Venezuela, Trinidad is a crossroads for shipping from North America and Europe bound for the Caribbean islands and South America. Offshore oil deposits provide the mainspring of wealth. Tobago lies one hundred miles away, with tourist beaches.

The carnivals are legendary but the celebrations are now more a welcome respite from unremitting austerity than a simple expression of exuberance. For the collapse of oil prices has cost the country dear: oil products account for over 80 per cent of exports. Worse was the closure of much of the country's refining industry as the oil giants switched to new US offshore facilities.

For some years the Government swept the problem under the carpet by spending its once huge reserves. The 'Trinis' carried on being the Caribbean's largest consumers. But in 1984 came a devaluation of the local dollar – followed by another in 1988. Unemployment went up and social expenditure was pared to the

bone. Today, car assembly lines are silent and the docks half empty. The trade unions, their membership decimated, can only protest impotently. Much of this bitter medicine was prescribed by the International Monetary Fund as a condition for aid and support for debt rescheduling.

Not that all this was entirely unwelcome. The consumer boom put immense strains on the infrastructure: after all, didn't the Prime Minister himself declare that 'money is no problem'? Corruption was a way of life. The bloated civil service became a byword for inefficiency. All pretence at planning disappeared. Property values soared, as did the numbers of homeless people.

High expectations for a return to the consumer cornucopia underlay the end of 30 years of rule by the People's National Movement in the 1986 election. The incoming Alliance for National Reconstruction was a multi-ethnic 'rainbow' alliance reflecting the country's racial mix. Trinidadians are divided between the 'Afros', descendants of the slaves, and the Indians and Chinese whose forebears were indentured labourers. But by 1988 the rainbow had evaporated as the large Indian grouping moved into its own political compound.

Yet all is far from lost. Local food is far more plentiful than before, new industries are springing up and exports growing. Foreign investment, once banned, is also on the move. And growing numbers of people have realized that true development cannot be measured by the imports of consumer goods. Like its own calypso music, Trinidad has a vivacious spirit and the ability to bounce back. Optimism is in the air again.

Tony Thorndike

At a glance

***** Excellent
 **** Good
 *** Fair
 ** Poor
 * Appalling

INCOME DISTRIBUTION ***

Narrowing gap between rich and poor but rising unemployment
 1980: **

SELF-RELIANCE ***

End of oil boom has forced greater food production
 1980: ***

POSITION OF WOMEN ***

Encouraging generally; less good in traditional Indian households
 1980: ***

POLITICS



Multi-party system promoting privatization



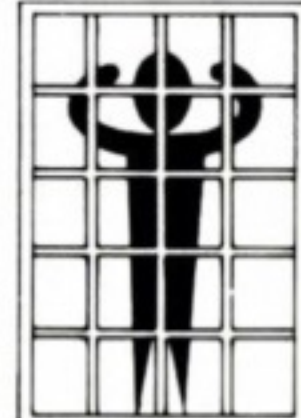
1980

LITERACY ****



97% Free and compulsory primary education; secondary school also free
 1980: ****

FREEDOM ****



No political prisoners; freedom of expression and assembly
 1980: ****

LIFE EXPECTANCY ****



65 years (US 75 years) Some decline due to cuts in health spending
 1980: ****

NOW NAMIBIA MUST WIN THE PEACE

Glenys Kinnock launched an appeal for the Namibian people on the anniversary of the Lockerbie air disaster. She is the Chair of a new Trust for Third World development named after Bernt Carlsson, UN Commissioner for Namibia, and one of the 270 innocent victims of Pan Am flight 103.



Bernt Carlsson was General Secretary of the Socialist International from 1976-83. He was killed on the way to the signing of the Namibia peace accord which he had helped negotiate.



Glenys Kinnock, chair of the new Trust, meeting the future, and hope, of Namibia at Onandjokwe Mission Hospital, July 1989.

The Trust is starting work in Namibia. It is supporting adult literacy programmes, community schools run by parents, rape crisis counselling, women's groups, creches, and every kind of self help group. After 20 years of war and apartheid oppression Namibia must now win the peace.

If you want to know more about the Trust and how you can help write to Glenys Kinnock, The Bernt Carlsson Trust,

8 Camden Road, London NW1 9DP or telephone 01-284 0330. (London code 071 after May 6.



Development Studies

The Selly Oak Colleges continue to offer short Development Studies courses for field workers and the management staff of non-government development agencies. Each one-term programme gives participants the opportunity to reflect on past experience, to analyse the nature of development processes and to improve skills in management and the use of aid. Courses run twice a year - from April to July and from September to December. Since 1974 more than 400 people from over 70 different countries have participated in the training programme.

To enable citizens of developing countries in the Commonwealth to attend these courses, the Nuffield Foundation is offering a number of study fellowships. Scholarship support may also be available from other donor agencies.

For further details, please write to - Laurence Taylor, Development Studies, Selly Oak Colleges, Birmingham B29 6LQ, UK.

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The NICARAGUA HEALTH FUND is inviting Dr Sue Murray to England on a speaking tour at the end of May. Dr Murray runs the training programme for midwives and primary health carers in Esteli, the centre of Region I health authority. Further details and more information from: *the NHF, 83 Margaret Street, London W1N 7HB, UK. Tel. 01-580 4292.*

TOWARDS 2000



A DERBYSHIRE PEACE FEDERATION CONFERENCE

**Saturday 19th May
9.30 am - 4.30 pm at
Chesterfield College of
Technology and Art**

Speakers include Meg Beresford (CND) and Colin Mark (Christian Aid). Group discussions on the Environment, Peace, Third World and related issues.

For further information contact:
R Calderwood, 11 Woodand Way, Old Tupton, Chesterfield, S42 6HZ. Tel: (0246) 862405.

SPONSORED BIKE RIDE FOR NICARAGUA Sunday 6th May 1990, London - Cookham (30 miles), London - Oxford (60 miles). Enjoy a day cycling through some of England's most scenic countryside, down leafy lanes and minor roads, with entertainers, refreshments and a concert in the evening. Return trains will be chartered for cyclists and free overnight accommodation is available. Further details: *NSC, 23 Bevenden Street, London N1 6BH. Tel: 01-253 0246 or Oxford 244327.*

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Hope for Africa

Africa is in crisis. Famines are commonplace. Its foreign debt is the heaviest in the world. Thirteen African countries are poorer today than they were at independence. And slowly but surely, the desert is spreading its cloak over the continent. But while most people talk about sub-Saharan Africa with despair, New Internationalist offers a new perspective - a way forward for Africa in the 1990s.

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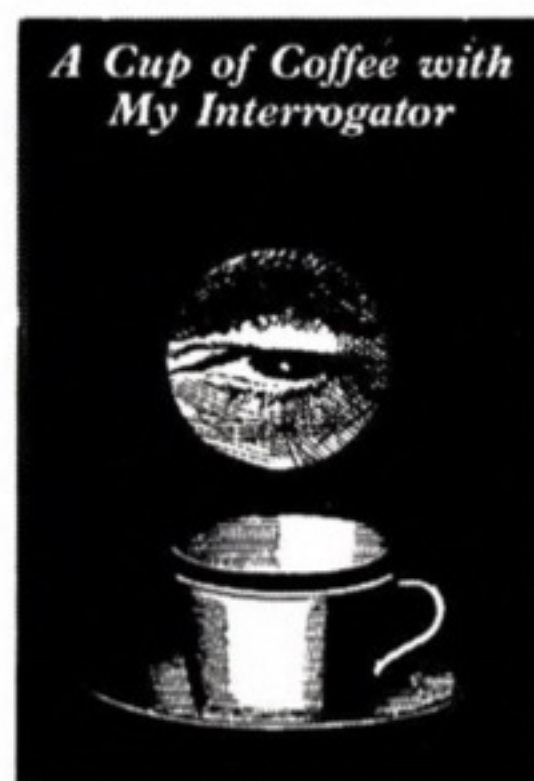
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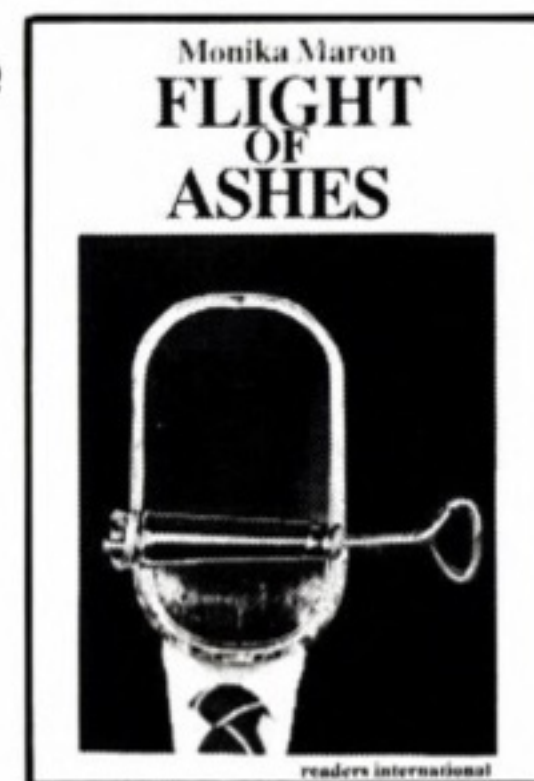
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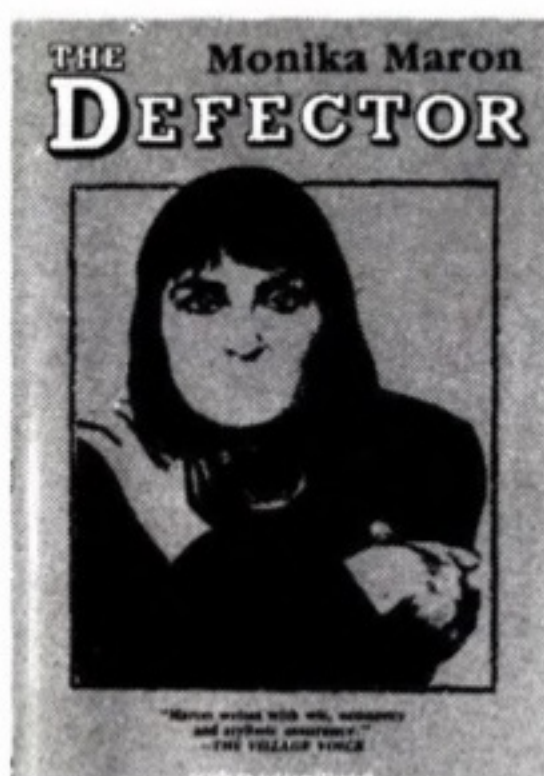
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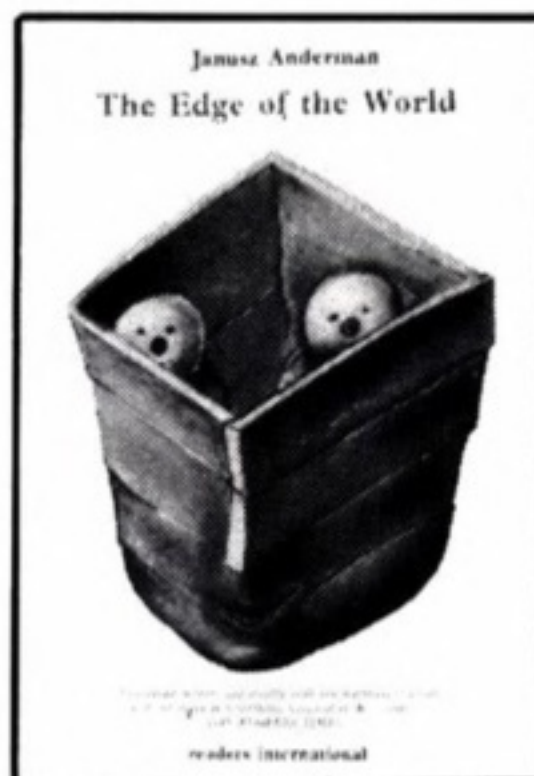
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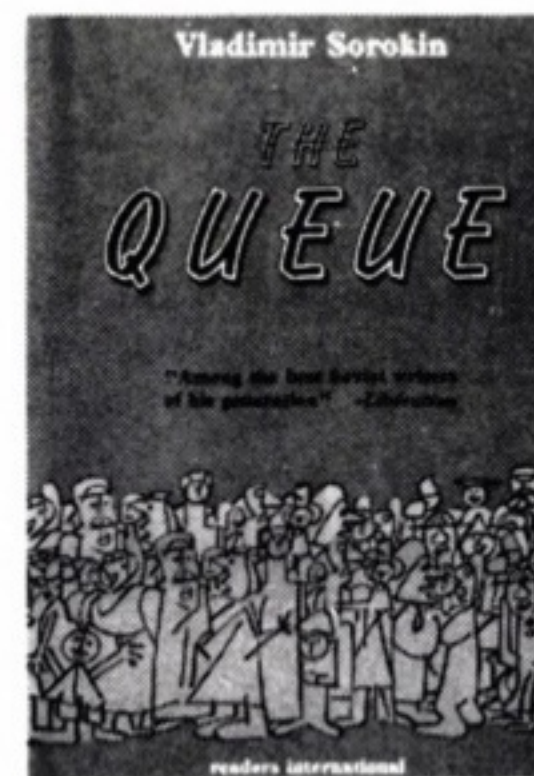
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The Defector (041) by
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